1. **EnBW at a glance**
   - Key financials
   - Key non-financials

2. **Environment**
   - Political environment
   - Regulatory environment
   - Markets

3. **Strategy**
   - EnBW 2020 Strategy
   - EnBW 2025 Strategy
   - Further strategic aspects:
     - Broadband, Contracting, Research and Development,
     - Innovation, Digitalisation, Corporate Sustainability,
     - Decarbonisation, Corporate Governance,
     - Compliance, Data Protection

4. **Segments**
   - Sales
   - Grids
   - Renewable Energies
   - Generation and Trading

5. **EnBW’s Main Shareholdings**
   - EnergieDienst Holding AG
   - Pražská energetika, a. s.
   - Stadtwerke Düsseldorf Group
   - VNG AG

6. **Key Financials and Non-financials**
   - Five-year summary
   - Fiscal year 2017
   - Half year 2018
   - Finance strategic and other goal dimensions

7. **Capital Markets**
   - Asset Liability Management Model
   - Bonds
   - Maturity profile
   - Credit Ratings
   - Shareholder structure
   - Share
   - Key financial indicators

8. **Service**
   - Financial calendar
   - Important links
   - Contact details
1.1 EnBW at a glance

One of the largest German utilities
- 5.5 m customers
- 13 GW generation portfolio
- Stable shareholder structure
- 21,000 employees
- Strong roots in Baden-Württemberg

Balanced risk-return profile
- Focus on renewables and grids
- ~65% EBITDA contribution from low-risk business
- Solid investment grade ratings
- Active in selected foreign markets

Key financial figures
- Revenue: €22 bn
- Adj. EBITDA: €2.1 bn
- Group net profit/loss: €2.1 bn

Fully integrated utility in Germany

Four Business Segments
- Sales
- Grids
- Renewable Energies
- Generation & Trading

---

1 As of 31 December 2017
2 E&P Business (Exploration & Production) via VNG Norge AS sold in 2018 (closing expected in autumn 2018)
## Key figures

### Key financials

<table>
<thead>
<tr>
<th>KPI</th>
<th>2017</th>
<th>Forecast 2020</th>
<th>Target 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adjusted EBITDA (€ bn)</td>
<td>2.1</td>
<td>2.3 - 2.5</td>
<td>Securing profitability</td>
</tr>
<tr>
<td>Internal financing capability</td>
<td>111.9</td>
<td>&gt;100</td>
<td>Maintain financial discipline</td>
</tr>
<tr>
<td>ROCE (% ROCE)</td>
<td>7.3</td>
<td>8.5 - 11</td>
<td>Raising the Group’s value</td>
</tr>
</tbody>
</table>

### Key non-financials

<table>
<thead>
<tr>
<th>KPI</th>
<th>2017</th>
<th>Forecast 2020</th>
<th>Target 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>RE share of generation capacity (%)</td>
<td>25.9</td>
<td>&gt; 40</td>
<td>Expand renewable energies</td>
</tr>
<tr>
<td>CO₂ intensity (g/kWh)</td>
<td>556</td>
<td>-15 % to -20%</td>
<td>Reducing CO₂ intensity by 15 to 20%</td>
</tr>
<tr>
<td>Customer Satisfaction Index (EnBW / Yello)</td>
<td>143/161</td>
<td>&gt;136 / &gt;159</td>
<td>Customer proximity</td>
</tr>
<tr>
<td>Employee Commitment Index</td>
<td>60</td>
<td>65</td>
<td>Employee commitment</td>
</tr>
</tbody>
</table>
1. EnBW at a glance.............................................................. page 3 >>
   › Key financials
   › Key non-financials

2. Environment........................................................................... page 6 >>
   › Political environment
   › Regulatory environment
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3. Strategy .................................................................................... page 39 >>
   › EnBW 2020 Strategy
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     Innovation, Digitalisation, Corporate Sustainability,
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4. Segments .................................................................................. page 77 >>
   › Sales
   › Grids
   › Renewable Energies
   › Generation and Trading

5. EnBW’s Main Shareholdings.............................................. page 116 >>
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6. Key Financials and Non-financials................................. page 133 >>
   › Five-year summary
   › Fiscal year 2017
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   › Bonds
   › Maturity profile
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   › Key financial indicators

8. Service ..................................................................................... page 157 >>
   › Financial calendar
   › Important links
   › Contact details
2.1 Political & regulatory environment

Paris Climate Agreement: Hold the increase in global average temperature to well below 2°C above pre-industrial levels and pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels

EU 2020 goals

<table>
<thead>
<tr>
<th>Goal</th>
<th>EU 2020 goals</th>
<th>EU 2030 goals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-20% GHG emissions</td>
<td>-40.0% GHG emissions</td>
</tr>
<tr>
<td></td>
<td>20% RE in final energy consumption</td>
<td>32.0% RE in final energy consumption</td>
</tr>
<tr>
<td></td>
<td>20% Energy savings</td>
<td>32.5% Energy savings</td>
</tr>
</tbody>
</table>

German Climate & Energy Policy Goals

Nuclear phase-out

Goal

- Last NPP to shut down by end of 2022
- Responsibility for financing of phase-out split between operators and government
- State-owned fund established in mid 2017
- Operators have partly transferred nuclear provisions and related liabilities to state

Renewables

Goal

- 2025: 40–45% RE
- 2035: 55–60% RE in electricity production
- RE share goal to be increased to 65% by 2030 in current legislative period
- Additional tenders for onshore wind and PV expected in 2019/2020
- Debate on tariff system and costs of power ongoing. Changes to charges expected

Coal phase-out

Goal

- Newly established commission to set phase-out date for coal-fired power generation by end of 2018
- Commission to set short-term goal for decommissioning a number of coal-fired power plants to reduce gap relative to national climate goals for 2020

Electricity grid expansion

Goal

- Remove bottleneck in energy transition (i.e. slowing grid expansion)
- Underground cabling given priority over overhead powerlines
- System of grid charges to be amended in next legislative period

EU 2030 goals

Goal

- -60% GHG emissions by 2020
- -20% primary energy consumption by 2020

EU 2030 goals

Goal

- -40% GHG emissions
- 32.0% RE in final energy consumption
- 32.5% Energy savings

EU 2020 goals

Goal

- -20% GHG emissions
- 20% RE in final energy consumption
- 20% Energy savings

German Climate & Energy Policy Goals

Paris Climate Agreement: Hold the increase in global average temperature to well below 2°C above pre-industrial levels and pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels

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<table>
<thead>
<tr>
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<td>-40.0% GHG emissions</td>
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<tr>
<td></td>
<td>20% RE in final energy consumption</td>
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</tr>
<tr>
<td></td>
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<td>32.5% Energy savings</td>
</tr>
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EU 2020 goals

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- 20% RE in final energy consumption
- 20% Energy savings

German Climate & Energy Policy Goals

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EU 2030 goals

Goal

- -60% GHG emissions by 2020
- -20% primary energy consumption by 2020

EU 2020 goals

Goal

- -20% GHG emissions
- 20% RE in final energy consumption
- 20% Energy savings
2.2.1 Decarbonisation: Global regulatory framework on climate change

The Paris Agreement

- Adopted at the UN Climate Change Conference COP21 in December 2015 by the 196 Parties to the UN Framework Convention on Climate Change (UNFCCC)
- Established a global warming goal well below +2°C on pre-industrial average with efforts to limit warming to +1.5°C in 2100 in relation to pre-industrial levels.
- Aims at achieving net-zero emissions in the second half of this century
- Defined a universal, legal framework where all countries develop and communicate their mitigation measures and “nationally determined contributions” (NDCs)
- Will be further defined at COP24 in Poland in 2018

Current pledges lead to global warming of at least +3 °C
(without yet calculating the impact of spill-over effects above +2 °C warming)

Source: Climate Action Tracker / Vox
2.2.2 Decarbonisation: International climate politics: Key events 2018

UN Climate Change Conference (Intersessionals) in Bangkok, Thailand
› When: 4-9 September
› Goal: Preparation of a draft resolution for the UN Climate Change Conference later in 2018

Approval of IPCC Special Report "Global Warming of 1.5°C"
› Final approval 1-5 October 2018
› The report will be about the impacts of global warming of 1.5°C above pre-industrial levels and related global GHG emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development and efforts to eradicate poverty

UN Climate Change Conference COP24 in Katowice, Poland
› When: 3-14 December 2018
› Goal: Create a framework and refine the details of the Paris Agreement (2015), among other things with uniform rules on how countries can reliably measure and report their CO₂ emissions and national contributions to climate protection

Other reports by 2022 include
› IPCC Special Report on Climate Change and Land (incl. desertification, land degradation, sustainable land management, food security) (2019)
› IPCC Sixth Assessment Report (2021/2022)
2.2.3 Decarbonisation: National GHG emissions and climate protection targets

German GHG emissions by sector
(in m t CO₂-equivalent; Source: UBA)

Sector targets for GHG emissions according to the German climate strategy Klimaschutzplan 2050

<table>
<thead>
<tr>
<th>Sector</th>
<th>1990 (in m t CO₂-eq.)</th>
<th>2014 (in m t CO₂-eq.)</th>
<th>2030 (in m t CO₂-eq.)</th>
<th>2030 (reduction compared to 1990)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy</td>
<td>466</td>
<td>358</td>
<td>175-183</td>
<td>62-61%</td>
</tr>
<tr>
<td>Buildings</td>
<td>209</td>
<td>119</td>
<td>70-72</td>
<td>67-66%</td>
</tr>
<tr>
<td>Transportation</td>
<td>163</td>
<td>160</td>
<td>95-98</td>
<td>42-40%</td>
</tr>
<tr>
<td>Industry</td>
<td>283</td>
<td>181</td>
<td>140-143</td>
<td>51-49%</td>
</tr>
<tr>
<td>Agriculture</td>
<td>88</td>
<td>72</td>
<td>58-61</td>
<td>34-31%</td>
</tr>
<tr>
<td>Subtotal</td>
<td>1.209</td>
<td>890</td>
<td>538-557</td>
<td>56-54%</td>
</tr>
<tr>
<td>Others</td>
<td>39</td>
<td>12</td>
<td>5</td>
<td>87%</td>
</tr>
<tr>
<td>Total amount</td>
<td>1.248</td>
<td>902</td>
<td>543-562</td>
<td>56-55%</td>
</tr>
</tbody>
</table>

The emission reduction target for 2020 will be missed by at least 60 m t CO₂.

2040 emissions target at least 70% below 1990 and 2050 target 80-95% below 1990.
2.2.4 Decarbonisation: 2020 targets no longer attainable in Germany and further reduction in coal-based generation by 2030 essential to target attainment

Situation in Germany

- German government has declared 2020 target unattainable but reaffirmed 2030 target
- Electricity sector has already contributed significantly to CO₂ reductions since 1990
- Heating and transport sectors have so far fallen short of expectations
- Reduction in coal-based emissions from current levels essential to attainment of 2020 and 2030 targets (approx. ⅓ by 2020 and ⅔ by 2030)
- Decommissioning path to be expected by 2025 for individual large GW volume coal power stations

Coal power station emissions: levels expected with current policies vs. permissible levels

(80% scenario²; m t CO₂-equivalent)

1 Sources: Fraunhofer ISI/Öko-Institut: Climate Protection Scenario 2050; BMU: Projection Report 2017
2 80% greenhouse gas reduction relative to 1990
2.2.5 Decarbonisation: Climate protection in the coalition agreement 2018

- **Climate Protection Act**
  - Coalition partners have agreed to adopt a Climate Protection Act in 2019 to achieve the emission reduction targets for 2030.
  - Coalition partners have agreed to adopt a Climate Protection Act in 2019. Aims to reduce the 2020 target gap and to attain the 2030 target. By the end of 2018, each federal ministry will present a program of measures addressing its respective sector targets.

- **CO₂ pricing**
  - Intention to strengthen EU-Emission Trading System
  - German government will advocate a global CO₂ pricing system at least among the G20 members.

- **Renewable energy sources**
  - RE expansion goals raised from 55% to 65% by 2030 (provided that the national grid is developed accordingly)
  - Special tenders in 2019 and 2020: 4 GW each for onshore wind and PV; additional expansion of offshore capacity

The coalition agreement shows highs and lows: A clear commitment to emission reduction and expansion of renewable energy sources. However, many problems like the reform of the tax and duties regime remain unresolved. As a consequence, attainment of the 55% reduction target by 2030 is uncertain.
2.2.6 Decarbonisation: The German Commission on Growth, Structural Change and Employment (“Coal Commission”)

Structure
- Four commission chairmen (two former lignite mining state premiers, one climate economist, one former Chief of the Chancellery)
- Representatives of eight federal ministries (incl. Economic Affairs and Energy, Environment, Interior, Labour, Transport, Finance)
- Representatives of six federal states with a connection to lignite
- 27 additional members from NGOs, research institutions, industrial and business associations etc.

Six key tasks
1. Planning of a national step-by-step coal phase-out including all accompanying economic, social and structural measures and an end date for coal-fired power generation in Germany
2. Measures to close the gap relative to Germany’s 2020 targets (40% reduction of GHG emissions) “as far as possible”
3. Measures to meet 2030 targets in the energy sector (e.g. reduce coal-related GHG emissions by roughly 60% compared to today)
4. Create new, sustainable employment in by a premature coal phase-out affected regions
5. Develop a comprehensive policy mix for economic development, structural change, social coherence & climate protection
6. Drive investment to accomplish structural change in affected regions and industries

Time frame
- October 2018: Initial social and economic policy recommendations for lignite mining regions
- November 2018: Recommendations for measures in the energy sector and for closing the gap relative to the 2020 targets
- December 2018: Delivery of final report to the Federal Government, incl. an end date for coal, publication of the final report
2.3 Regulated business grids

Regulatory environment

- Electricity transmission and distribution grids remain regulated, including in the long term, as a natural monopoly
- Regulatory risks manageable due to the increasing stability of the regulatory framework
- Revenue cap regulation enables grid revenues to remain independent of consumption fluctuations
- Pressure to be as efficient as possible ongoing due to regulation
- Improved investment conditions for transmission grids on account of changes in the regulatory framework
- The regulatory framework for investment in distribution grids is set to improve in some respects as of the third electricity regulation period (from 2019) due to the reform of the Incentive Regulation Ordinance of mid-2016
- Amendment of Incentive Regulation Ordinance generally leads to no substantial change in the regulatory framework for transmission and distribution grid operators

Challenges for grids in Europe

Three main challenges for grids:
- Electricity generation is becoming increasingly uneven – fluctuations have an impact on grid stability
- Many decentralised electricity generation plants connected to the grid – load flow reversals possible in some instances
- Germany as a transit country – large proportion of cross-border trading

EnBW’s approaches to solutions:
- TSO: New transmission lines can bridge the distance between focal point of production and consumption centres; use of HVDC transmission lines and underground cables
- DSOs: Expansion of the grids to integrate renewables, smart expansion of distribution grids, efficient and swift expansion of the distribution grids by municipal partners
2.4 Market development

**Generation and trading**
- Sustained trend towards renewable energies¹:
  - > 120 GW by 2020
  - > 160 GW by 2030
- Time of profitable operation of conventional power plants in steady decline
- Increasing power generation from gas power plants due to coal-to-gas fuel switching
- Increasing volatility of prices and volumes

**Power and gas grids**
- Volatile electricity generation detrimental to grid stability
- Transmission grid expansion accelerated by raising the renewable energy target to 65% by 2030
- Further investment needed for expansion of power distribution grids, e.g. due to the increase in e-mobility
- Conventional power stations increasingly in back-up role
- Accelerating expansion of smart grids
- Moderate expansion of gas grids

**Customers**
- Downturn in demand for electricity and gas due to energy efficiency and rise in demand from electric vehicles and residential heating sector¹ in the future.
- Renewables for the most part in the hands of non-PSCs²
- Consumer playing an increasingly active role with PV and battery systems and electromobility³
- Landlord-to-tenant electricity supply still uneconomic (inhibited by EEG levy)
- Number of energy co-operatives has increased sixfold since 2008 from ~150 to 970.
- Rising importance of developing new (digital) business models

**Technological developments**: More diversity, modularity and granularity in the energy system

**New market participants**: More competition and fragmentation of the value chain

**Regulatory framework conditions**: Undergoing constant change, rising complexity

**Business models of large utilities are changing; accelerating development of renewable energies and grids as well as new services for customers**

¹ Depending on regulatory policies
² Power supply companies
³ Rising new registrations compared to previous years
2.5.1 German electricity market: Development of household energy prices

The chart shows the development of prices (indexed rates of increase, not absolute fuel prices) for heating oil, gas, electricity and district heating for households since January 2001 relative to the 2010 base year (annual average).

Source: Federal Statistical Office [FS 17, R 2], BDEW [electricity 3,500 kWh/a]
2.5.2 German electricity market: Installed capacity and electricity generation 2017

- **Installed Capacity**: 216.0 GW (net)
- **Electricity generation**: 620.5 TWh (net)

Source: BDEW, April 2018

1 As of 31 December 2017
2.5.3 German electricity market: Electricity consumption

Electricity consumption in Germany
in TWh


Net electricity consumption stable in the past few years; reduction due to efficiency is compensated by changes in consumption habits and economic growth

Figures as of February 2018; Source: AGEB
2.5.4 German electricity market: Electricity price

Electricity price

- 54.2% share of electricity price for private households

- VAT 19%
- Electricity duty 7.0%
- Concession fee 5.6%
- EEG levy 23.1%
- CHP surcharge 1.3%
- Offshore liability surcharge 0.1%
- Sec. 19 Ordinance for Electrical Low-Voltage products (NEV) surcharge 2.6%

Average electricity price for a 3-person household
(Annual consumption of 3,500 kWh)
Cents/kWh

<table>
<thead>
<tr>
<th>Year</th>
<th>EEG Levy</th>
<th>Concession Fee</th>
<th>Electricity Duty</th>
<th>CHP Surcharge</th>
<th>Offshore Liability Surcharge</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>6.74</td>
<td>7.05</td>
<td>14.91</td>
<td>7.05</td>
<td>28.70</td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td>6.26</td>
<td>7.01</td>
<td>15.53</td>
<td>6.26</td>
<td>28.80</td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td>5.71</td>
<td>7.51</td>
<td>16.06</td>
<td>5.71</td>
<td>29.28</td>
<td></td>
</tr>
<tr>
<td>2018</td>
<td>6.20</td>
<td>7.27</td>
<td>15.97</td>
<td>6.20</td>
<td>29.44</td>
<td></td>
</tr>
</tbody>
</table>

Source: German Federal Association of Energy and Water Management (BDEW), figures as of May 2018

1 Average concession fee; varies according to size of community

Source: BDEW, figures as of May 2018
2.5.5 German electricity market: Wholesale forward price

Forward price for baseload electricity in Germany

in €/MWh

Base 2019
Base 2020
Base 2021

2013 2014 2015 2016 2017 2018
2.5.6  German electricity market: CSS at low levels and negative prices for CDS

Clean-dark-spread base

in €/MWh

- Gross margin of a coal-fired power plant (plant efficiency: 36%)

Clean-spark-spread peak

in €/MWh

- Gross margin of a gas-fired power plant (plant efficiency: 50%)

Clean-spark-spread represents the net revenue a generator makes from selling power, having bought gas and the required number of carbon allowances. Clean-dark-spread is the corresponding indicator for coal-fired generation of electricity.
2.5.7 German electricity market: Comparison for electricity transmission and distribution grids

### Transmission grids 380 kV, 220 kV

- **Organisation**
  - 4 operators: 50Hertz, Amprion, TenneT, TransnetBW
  - Grid length: ~36,600 km
  - Grids owned by operators

- **Tasks**
  - Ensuring balance between generation and consumption
  - Using balancing power

- **Challenge of the Energiewende**
  - Transport of wind-generated electricity from northern to southern Germany
  - Building new HVDC transmission lines
  - Connecting offshore wind farms

- **Unbundling regulations**
  - Ownership unbundling, independent transmission operator (ITO)

### Distribution grids ≤ 110 kV

- **Organisation**
  - 817 operators
  - Grid length: ~1,808,000 km
  - Franchises issued by municipalities
  - Competition for franchises

- **Tasks**
  - Connecting consumers and local providers
  - Recording incidents and troubleshooting

- **Challenge of the Energiewende**
  - Connection of decentralised renewables (e.g. PV, wind)
  - Integration of charging infrastructure for electric cars
  - Use of smart grid tech and digitalisation of metering operation (e.g. smart meters)

- **Unbundling regulations**
  - Functional and financial unbundling of the grid business and obligation as to non-discriminatory use of grid information

Source: BNetzA/BKartA Monitoring Report December 2017
Electricity grids

General
- The electricity grid business has become a growth business due to the remodelling of the energy market
- Changes in legislation have simplified reimbursement for costs of investment in grids: e.g. revision of the Incentive Regulation Ordinance (ARegV)

Transmission grid
- Growing geographical imbalance between generation and consumption
- Expansion of transmission grid – primarily construction of high voltage direct current (HVDC) transmission lines and connection of offshore wind farms

Distribution grid
- Feed-in growing due to local generation
- Still strong trend back to municipal ownership (large share of concession already extended, however)

Capex for expansion of the German electricity grid through to 2030

<table>
<thead>
<tr>
<th>Type</th>
<th>Expansion (€ bn)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transport grids</td>
<td>33</td>
</tr>
<tr>
<td>Offshore connection</td>
<td>17</td>
</tr>
<tr>
<td>Distribution grids</td>
<td>20</td>
</tr>
<tr>
<td>Total expansion</td>
<td>70</td>
</tr>
</tbody>
</table>

Source: Federal Requirements Plan, network development plan 2030, offshore network development plan 2030; BMWi Distribution Grid Study 2014
### 2.6.1 German gas market: Gas price

#### Single-family home, gas central heating

Including hot water, customer on contract with regional default supplier² (annual consumption 20,000 kWh)

<table>
<thead>
<tr>
<th>Cents/kWh</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.52</td>
<td>0.55</td>
<td>1.04</td>
<td>0.55</td>
<td>0.55</td>
<td>0.55</td>
</tr>
<tr>
<td>6.26</td>
<td>0.03</td>
<td>0.55</td>
<td>1.00</td>
<td>0.94</td>
<td>0.91</td>
</tr>
<tr>
<td>5.89</td>
<td>1.49</td>
<td>1.53</td>
<td>1.62</td>
<td>1.59</td>
<td>1.53</td>
</tr>
<tr>
<td>5.73</td>
<td>3.41</td>
<td>3.15</td>
<td>2.75</td>
<td>2.65</td>
<td>2.68</td>
</tr>
<tr>
<td>5.70</td>
<td>0.03</td>
<td>0.03</td>
<td>0.03</td>
<td>0.03</td>
<td>0.03</td>
</tr>
</tbody>
</table>

**Taxes and duties**

26%

**Regulated network user charges¹**

(including metering, billing and metering station operation)

27%

**Gas procurement and sales**

(market-determined)

47%

---

¹ Average net network user charge including charges for metering, metering station operation and billing, subject to large regional variation, source: BDEW, as of 01/2018

² Most heating gas customers are customers on contract with the regional default supplier, with reduced concession fee (0.03 ct/kWh), source: BDEW, 01/2018
2.6.2 German gas market:
Front month price development

Front month reference prices$^1$
in €/MWh

1 Average of Gaspool and NCG
2.6.3 German gas market: Spot price development

Spotmarket reference prices\(^1\)
in €/MWh

\(^1\) Average of Gaspool and NCG
### 2.6.4 German gas market: Grids: Comparison for gas transmission and distribution grids

<table>
<thead>
<tr>
<th><strong>Transmission grids</strong></th>
<th><strong>Distribution grids</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>380 kV, 220 kV</strong></td>
<td><strong>≤ 110 kV</strong></td>
</tr>
<tr>
<td><strong>Organisation</strong></td>
<td><strong>Tasks</strong></td>
</tr>
<tr>
<td>16 grid operators</td>
<td>Transport gas from import to export points (transit) and vice versa [DSOs and industry or other market areas]</td>
</tr>
<tr>
<td>Grid length: ~38,800 km</td>
<td></td>
</tr>
<tr>
<td>Grids owned by operators</td>
<td></td>
</tr>
<tr>
<td>Two market areas [NetConnect Germany and Gaspool]</td>
<td></td>
</tr>
<tr>
<td><strong>Challenge of the Energiewende</strong></td>
<td>Integration of bio natural gas [number of biogas plants increased by 100% in the last 10 years]</td>
</tr>
<tr>
<td>Long term: potential use of natural gas grid as storage medium for electricity generated from renewables</td>
<td>Degree of utilization, if electricity heating and long distance heating increases</td>
</tr>
<tr>
<td><strong>Unbundling regulations</strong></td>
<td>Functional and financial unbundling of the grid business and obligation as to non-discriminatory use of grid information</td>
</tr>
<tr>
<td>Ownership unbundling, independent transmission operator (ITO)</td>
<td></td>
</tr>
</tbody>
</table>

**Source:** BNetzA/BKartA Monitoring Report December 2017

---

**Organisation**
- 16 grid operators
- Grid length: ~38,800 km
- Grids owned by operators
- Two market areas [NetConnect Germany and Gaspool]

**Tasks**
- Transport gas from import to export points (transit) and vice versa [DSOs and industry or other market areas]

**Challenge of the Energiewende**
- Long term: potential use of natural gas grid as storage medium for electricity generated from renewables

**Unbundling regulations**
- Ownership unbundling, independent transmission operator (ITO)
- Integration of bio natural gas [number of biogas plants increased by 100% in the last 10 years]
- Degree of utilization, if electricity heating and long distance heating increases
- Functional and financial unbundling of the grid business and obligation as to non-discriminatory use of grid information
2.6.5  German gas market: Gas grids are a major element of the “Energiewende”

Gas grids

General
- Long-term increase in demand for H-gas capacity in Germany:
  - approx. +17% up to 2020
  - approx. +38% up to 2025
  - approx. +47% up to 2030

Transmission grid
- Increasing capacity requirements from changes in regulatory environment: Switch in the market from L-gas to H-gas
  (approx. half of L-gas from NL to be replaced by H-gas from Russia/Norway by 2025)

Distribution grid
- Smaller scale of expansion compared to electricity because “Energiewende” has less pronounced effect on gas market
- Growth potential due to the connection of new communities to the natural gas grid
- Still strong trend back to municipal ownership

Expansion of the gas transmission grid in Germany through to 2029

- Compressors in MW
- Transmission lines in km

Investment of ~ €7.0 bn, of which ~€6.8 bn by 2024

Source: Draft gas network development plan 2018-2028
2.7 German infrastructure market

German infrastructure market

in € bn

- 100
- 150

2015 2025

Strong growth in German infrastructure market

Rapid growth supported by megatrends such as digitalisation, sector coupling (e.g. e-mobility) and decarbonisation

Attractive margins generally attainable with prospects of long-term earnings
2.8 Sector coupling

Sector coupling is the direct and indirect\(^1\) use of renewable electricity in the renewable electricity in the heating, transport and industry sectors.

**Expansion of renewable energies**
Target: 65% share of gross electricity consumption by 2030; 14% share of heat generation by 2020.

**Electrification of heat generation**
Electrification of heat generation, e.g., using heat pumps and electric boilers (>12 m heat pumps by 2050).

**Vehicle electrification**
~28 m vehicles by 2050.

**Storage**
Temporary storage of excess electricity or conversion into heat/synthetic fuels or gas.

**Rising consumption**
Greater use of renewable electricity in other sectors for 100-200 TWh rise in electricity consumption by 2050.

---

\(^1\)Use of renewable electricity after conversion to synthetic gases, fuels or industrial feedstocks.
2.9 Broadband

German government aims to raise upper limits for public funding and simplify the procedure.

Coalition target: Universal availability of gigabit broadband throughout Germany by 2015.

€10 bn to €12 bn in additional funding planned for the next few years.

Broadband connections as of 31 December 2017:
- 33.2 m total connections
- 24.7 m DSL / VDSL
- 7.7 m TV cable
- 0.8 m Glass fibre
- 0.1 m Mobile and other

Source: F.A.Z./Federal Network Agency
### Competitors: International, national, regional and new competitors

<table>
<thead>
<tr>
<th>Competitors</th>
<th>Characteristics</th>
<th>Position of EnBW</th>
</tr>
</thead>
<tbody>
<tr>
<td>International</td>
<td>› Broad-based, internationally oriented growth strategy</td>
<td>› EnBW is positioned as an integrated energy company focusing on Germany and selected foreign markets</td>
</tr>
<tr>
<td></td>
<td>› Growth especially in renewable energies, grids and sales/solutions</td>
<td></td>
</tr>
<tr>
<td>National (DACH region)</td>
<td>› Stable national position, activities in selected foreign markets</td>
<td>› Main growth areas:</td>
</tr>
<tr>
<td></td>
<td>› Focus on market development, for example in renewable energies, grids, sales and/or solutions</td>
<td>- Renewable Energies</td>
</tr>
<tr>
<td>Regional</td>
<td>› Focus on regional markets</td>
<td>- Grids</td>
</tr>
<tr>
<td></td>
<td>› Main focus of the business activities mostly in area of grids and sales</td>
<td>- Customer Solutions</td>
</tr>
<tr>
<td>New</td>
<td>› Entry of new market participants increases competition and leads to fragmentation of the value chain</td>
<td></td>
</tr>
</tbody>
</table>

**Key challenge:** Optimal positioning given the regulatory/competitive market environment
2.11 The “Energiewende” increases competition

**Retail and business customers – trends**

- Growing price sensitivity\(^1\) and new competitors lead to fiercer competition
- Lateral entrants and intermediaries are increasingly competing for customers and market shares
- Commodity business (electricity and gas) is still significant
- Local energy production by customers on the rise: Consumers are becoming prosumers
- Intelligent meters change customer access and are a prerequisite for the development of future energy solutions business
- Increasing energy efficiency (supported by political measures)
- Local energy solutions offered by utilities, together with new competitors
- EnBW as a partner for the industry and housing industry and municipalities
- Increasing convergence on the markets due to sector coupling and the electrification of heating and transport (car manufacturers, CHP manufacturers as electricity suppliers and virtual power plant platform operators)
- To increase the attractiveness of pure energy products, more and more energy suppliers are offering their customers bundled products, hardware products or smart home products in addition to their electricity contracts

---

\(^1\) Source: Kreutzer Vertriebskanalstudie 2018

**Strong competition:**

**Cumulative churn rate of retail customers**\(^2\)

<table>
<thead>
<tr>
<th>Year</th>
<th>Electricity</th>
<th>Gas</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>11.0</td>
<td>1</td>
</tr>
<tr>
<td>2008</td>
<td>18.90</td>
<td>7</td>
</tr>
<tr>
<td>2009</td>
<td>20.70</td>
<td>11</td>
</tr>
<tr>
<td>2010</td>
<td>21.90</td>
<td>12</td>
</tr>
<tr>
<td>2011</td>
<td>25.80</td>
<td>14</td>
</tr>
<tr>
<td>2012</td>
<td>29.70</td>
<td>18</td>
</tr>
<tr>
<td>2013</td>
<td>33.50</td>
<td>26</td>
</tr>
<tr>
<td>2014</td>
<td>36.10</td>
<td>28</td>
</tr>
<tr>
<td>2015</td>
<td>39.50</td>
<td>31</td>
</tr>
<tr>
<td>2016</td>
<td>42.00</td>
<td>32</td>
</tr>
<tr>
<td>2017</td>
<td>42.70</td>
<td>33</td>
</tr>
</tbody>
</table>

\(^2\) Source: BDEW 2018
2.12 Market potential for energy-related services

**Operations**

- Market for energy-related services very fragmented
- Market volume in Germany €5.5 bn
- Intense competition with new players from the energy industry, and from other industries, continually surging onto the market
- Growing challenges for municipal utilities from rising pressure on costs, the need to meet regulatory requirements and billing technology for the remodelling of the energy market
- High fixed costs mean that the business is heavily influenced by economy of scale
- Cost advantages for large providers
- Technology shift and economies of scale offer significant growth opportunities in the market, especially in the area of smart metering solutions

**Services and key competencies**

- EnBW services cover the complete meter-to-cash value chain. Services can be chosen to suit the individual needs of utility companies
- Services for non-commodity products and solutions, e.g. e-mobility and bundled prosumer products
- Services either as software-as-a-service only or full-scale business process outsourcing
- EnBW has proven knowledge in liberalised utility markets and clear positioning as a leading provider of smart metering services
# Development path for energy solutions

## Data and analysis
- Metering services
- Energy audits and management systems
- Status reports on energy system
- Procurement support for energy efficiency
- Market integration by virtual power plants

## Assets, maintenance and operation
**Commercial and industrial customers, municipalities and housing sector:**
- Supply and performance contracting
- Energy-efficient building refurbishment
- General contracting
- Management optimisation of customers’ energy generation assets and infrastructure

**Residential Customers:**
- Integrated modular energy system for residential (PV, battery, heating, e-mobility, commodity)

## E-mobility
- A growing market
- Integrated solutions for different customer groups (public, commercial, industrial, residential)
- Assets, maintenance and operation of infrastructure
- Entry and billing systems
- Interconnection with other areas related to the energy system of the future such as PV/storage
2.14.1 Contracting:
Media and services from a single source

Growth in German contracting market to 2025\(^1\)

<table>
<thead>
<tr>
<th>Year</th>
<th>Value pool in €m</th>
<th>Profit pool in €m</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>3,925</td>
<td>246</td>
</tr>
<tr>
<td>2020</td>
<td>5,004</td>
<td>310</td>
</tr>
<tr>
<td>2025</td>
<td>6,408</td>
<td>394</td>
</tr>
</tbody>
</table>

- Custom contracting solutions for industry, housing sector, public sector and commercial/retail/service customers – spanning the entire value chain
- 200 plants under contract
- Core contracting activities complemented with additional services around plant energy efficiency
- Wide range of plant types (including large complex plants, currently up to 100 MWth) for diverse customer needs; focus on heat and/or power (CHP)
- Targeting German national market
- Main focus in housing sector projects currently on Baden-Württemberg

\(^1\) Source: EnBW C-UE, Marktperspektive 2016 – Segment Vertrieb

- Continuous market growth through to 2025 (also aided by energy price increase)
- Growth opportunities to be exploited, primarily by:
  - Expanding and adding versatility in the service portfolio
  - Expanding activities in the role as **infrastructure service provider** [e.g. combining energy supply with charging infrastructure, storage systems, etc.]
2.14.2 Contracting: Challenging market environment

### General market trends

- Increasing importance of distributed energy
- Slight rise in energy prices in next few years
- Slight medium-term rise in interest rates
- Increasingly complex regulatory framework, such as building energy efficiency requirements (smart buildings)
- Current customer segments to retain relevance through to 2025 [in terms of value pool] – industry remains biggest segment

### Customer trends

- Growing numbers of (complex) distributed energy systems
- Focus on core business: capex optimisation, reduction of operating risks in energy provision
- Increasing demand for outside staff (rather than maintaining in-house resources) for ‘special’ task area of distributed energy
- Key importance of energy efficiency (energy the biggest cost factor)
- Majority of residential housing stock outdated in terms of energy efficiency; interest in modernisation, with focus on heating and additional services

### Provider/product trends

- Integration of additional services, such as energy management [and energy management systems]
- Increasing use of combination packages and new contracting models, such as landlord-to-tenant electricity supply and combining with other services [e.g. direct marketing] and systems [e.g. charging infrastructure]
- Ongoing need for complex custom solutions, with partial standardisation for smaller-scale projects and housing sector
- Expansion of [direct] marketing and local presence; more alliances
- Digitalisation, such as systems monitoring and energy data monitoring

---

Market and customer trends require contracting providers to adjust their capability portfolios, mostly in terms of media mix, increased versatility and additional services

Source: trend:research market study, "Markt und Marktentwicklung für Contracting", reference scenario, January 2017; own market analysis
1. EnBW at a glance................................................................. page 3 >>
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   › Key non-financials

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   › Regulatory environment
   › Markets

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   › EnBW 2020 Strategy
   › EnBW 2025 Strategy
   › Further strategic aspects:
     Innovation, Research and Development,
     Corporate Sustainability, Decarbonisation,
     Corporate Governance, Compliance, Data Protection

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   › Grids
   › Renewable Energies
   › Generation and Trading

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   › EnergieDienst Holding AG
   › Pražská energetika, a. s.
   › Stadtwerke Düsseldorf Group
   › VNG AG

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   › Fiscal year 2017
   › Half year 2018
   › Finance strategic and other goal dimensions

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   › Bonds
   › Maturity profile
   › Credit Ratings
   › Shareholder structure
   › Share
   › Key financial indicators

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   › Financial calendar
   › Important links
   › Contact details
3.1 EnBW 2020 strategy: Corporate strategy

**Where shall we play?**

- End customer business for electricity and gas
- Energy-related services/energy efficiency (defined B2C and B2B segments, increasingly for municipal utilities and local communities)
- Trading and origination

**How can we win?**

- System expertise for energy
- Innovative capability and innovation management
- Strong brand portfolio

**What should our structure be?**

- Building up of an Innovation campus
- Acquisition of/joint ventures with energy-related companies

**Engine room of the Energiewende**

- Wind (onshore and offshore) and hydropower
- Conventional generation, located mainly in Baden-Württemberg
- Transmission and distribution grid infrastructure managed from Baden-Württemberg into neighbouring regions (also as service provider)

- Operational excellence
- Infrastructure in the energy industry
- Regulatory management
- Active opportunities for third parties to invest and participate

- Maximum efficiency
- Stringent cost orientation for defined quality level (target costing)
- Simplicity and standardisation
- Technological development partnerships

**Customer proximity**

- From the region of Baden-Württemberg into Germany, Austria, Switzerland and Turkey

- Stringent performance management
- Partnerships and fostering dialogue

- Simple and functional management with simple structures, flat hierarchies and lean processes
3.2 Strategy: Implementing the EnBW 2020 Strategy requires major portfolio transformation

<table>
<thead>
<tr>
<th>Category</th>
<th>2012</th>
<th>2020</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generation and Trading</td>
<td>1.2</td>
<td>0.3</td>
<td>-80%</td>
</tr>
<tr>
<td>Renewable Energies</td>
<td>0.2</td>
<td>0.7</td>
<td>+250%</td>
</tr>
<tr>
<td>Grids</td>
<td>0.8</td>
<td>1.0</td>
<td>+25%</td>
</tr>
<tr>
<td>Sales</td>
<td>0.2</td>
<td>0.4</td>
<td>+100%</td>
</tr>
</tbody>
</table>

Adjusted EBITDA in € bn

2012: 2.4, 2020: 2.4
3.3 Strategy: 2018-2020 investment program kept flexible with focus on growth in low-risk businesses

Investment/divestment volume 2012-2020

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Growth investment</td>
<td>5.1</td>
<td>3.9</td>
<td>5.8</td>
<td>5.8</td>
<td>5.8</td>
<td>5.8</td>
<td>5.8</td>
<td>5.8</td>
<td>5.8</td>
</tr>
<tr>
<td>Total divestment</td>
<td>4.3</td>
<td>3.1</td>
<td>2.6</td>
<td>2.6</td>
<td>2.6</td>
<td>2.6</td>
<td>2.6</td>
<td>2.6</td>
<td>2.6</td>
</tr>
<tr>
<td>Net investment</td>
<td>5.5</td>
<td>11.0</td>
<td>11.5</td>
<td>11.5</td>
<td>11.5</td>
<td>11.5</td>
<td>11.5</td>
<td>11.5</td>
<td>11.5</td>
</tr>
</tbody>
</table>

Investment volume 2018–2020

- Adj. EBITDA 2020 ≥ €2.4 bn
- €6.3 bn

- Low-risk earnings [80%]
- Growth investment [78%]
- Generation & Trading/Sales 53%
- Grids 13%
- Renewable energies, mainly offshore 26%
- Others 8%

1 As of 31 December 2017; 2012 as reference year
Divergence from 100% possible due to rounding effects
3.4 Strategy: Earnings turnaround in 2017

Adjusted EBITDA
in € bn

<table>
<thead>
<tr>
<th>Year</th>
<th>EBITDA (€ bn)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>2.40</td>
</tr>
<tr>
<td>2013</td>
<td>2.23</td>
</tr>
<tr>
<td>2014</td>
<td>2.17</td>
</tr>
<tr>
<td>2015</td>
<td>2.11</td>
</tr>
<tr>
<td>2016</td>
<td>1.94</td>
</tr>
<tr>
<td>2017</td>
<td>2.11</td>
</tr>
<tr>
<td>2018</td>
<td>0% to +5%</td>
</tr>
<tr>
<td>2019</td>
<td>0% to +5%</td>
</tr>
<tr>
<td>2020</td>
<td>≥ 2.40</td>
</tr>
</tbody>
</table>

1 Referred to forecast 2018

Turnaround

› Operating performance
› Efficiency measures
› Financial discipline
3.5 Strategy: Efficiency targets already to be met by 2019

Efficiency programs: launch
in € m

- Unprofitable power plants incorporated in German power plants network reserve
- 2016: Exit from unprofitable B2B commodity business
- 2017–2020: ~€100 m p.a. from 6.3% management and workforce pay cut
- ~€150 m p.a. contribution from functional units, including holdings such as VNG

Efficiency measures: ramp-up
in € m

- 2016
  - 1,050
  - 750 Additional
  - 300 FOKUS

- 2017
  - 1,250
  - 750 Additional
  - 500 FOKUS

- 2019
  - 1,400
3.6 Strategy: Substantial progress in portfolio transformation

Adjusted EBITDA\(^1\)
in € m

<table>
<thead>
<tr>
<th>Year</th>
<th>Renewable Energies</th>
<th>Grids</th>
<th>Sales</th>
<th>Generation &amp; Trading</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>48%</td>
<td>10%</td>
<td>33%</td>
<td>10%</td>
</tr>
<tr>
<td>2018</td>
<td>10-15%</td>
<td>50-55%</td>
<td>15-20%</td>
<td>15-20%</td>
</tr>
<tr>
<td>2020</td>
<td>15%</td>
<td>40%</td>
<td>30%</td>
<td>15%</td>
</tr>
</tbody>
</table>

Share of low-risk earnings

Realistic earnings target 2020

- Expansion of onshore wind from 540 MW to 1,000 MW
- Commissioning of Hohe See and Albatros 609 MW offshore wind farms in 2019
- Continuous investment in distribution and transmission grids
- Efficiency measures totalling €1.4 bn will already be achieved in 2019

\(^1\) May not add up to 100% due to rounding
\(^2\) Forecast
3.7 EnBW 2025 Strategy: From transformation to growth

**Development of earnings**
Adjusted EBITDA in € bn

<table>
<thead>
<tr>
<th>Category</th>
<th>2020</th>
<th>2025</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generation &amp; Trading</td>
<td>2.4</td>
<td>&gt; 3.0</td>
</tr>
<tr>
<td>Renewable Energies</td>
<td>0.2 - 0.3</td>
<td></td>
</tr>
<tr>
<td>Grids</td>
<td>0.3 - 0.4</td>
<td></td>
</tr>
<tr>
<td>Sales</td>
<td>0.1 - 0.2</td>
<td></td>
</tr>
</tbody>
</table>

1. **Sustainable power infrastructure, i.a.**
   - Expansion of renewable energies (e.g. onshore and offshore wind to ≥ 3,500 MW)
   - Selective international business activities
   - Active design of decarbonisation

2. **System-critical infrastructure, i.a.**
   - Profitable growth in the distribution grid (e.g. grid integration of e-mobility and decentralised energy generation)
   - Significant expansion of electricity transmission grid
   - Growth of network-related services (grid)

3. **Smart infrastructure for customers, i.a.**
   - Reorganisation and digitisation of B2C sales as well as transformation to customer infrastructure business
   - Expansion of the solution portfolio (e.g. e-mobility, photovoltaic / battery and heat)
   - New infrastructure-related business areas beyond energy (e.g. urban infrastructure and public security)
3.8 Strategy: Resulting investment priorities 2021–2025: 80% targeting growth

Allocation of investment spending 2021 - 2025

- 80% targeting growth
- 20% existing business activities
- 33% sustainable power infrastructure
- 53% system-critical infrastructure
- 14% smart infrastructure for customers

2025 adjusted EBITDA for the Group > €3 bn

1 Rounded figure
3.9.1 Infrastructure market

Main targets

New growth areas beyond energy infrastructure, closely linked to EnBW’s existing core competencies

Examples:

› Pool existing activities and products and build integrated, extended portfolio going beyond energy

› Support lock enlargement on rivers (Neckar, others?) for larger scale vessels

› Launch and build substantial e-mobility activities focused on grid and charging infrastructure, plus [digital] services

Enhanced emphasis on infrastructure aspects in our existing businesses

Examples:

› Expand NetCom’s telco and broadband activities into major earnings pillar for EnBW Group

› Devise business models for enhanced public security based on digital solutions and components (e.g. video surveillance)
3.9.2 Infrastructure market: Thinking ahead about energy

- Charging on the go
- Taking electric energy to a summer cottage
- Charging at work
- Charging at the hotel
- Market access
- Public charging
- Residential development

- Home
  - Solar array
  - Intelligent measurement systems (iMSys)
  - Energy storage
  - EnergyBase
  - Intelligent network

- Community

- Agenda
3.9.3 Infrastructure market

- Largest operator of fast charging stations in Germany (at one in three Tank&Rast service areas)
- Greatest network coverage: Charging at 90% of public fast charging stations in Germany
- Access to over 19,000 charging points in Germany, Austria and Switzerland with attractive pricing (roaming)
- Our target: 1,000 fast charging locations by 2020, including in cities
- Phased expansion: 300 kW charging stations with 3 min charging for 100 km
- Award-winning EnBW mobility+ app
  Most frequently downloaded e-mobility app in Germany (over 130,000 downloads and over 3,000,000 simulated kilometres)
- Integration with EnBW solar+
  Generate your own power and use it in your electric car
- Matching charging solutions for home, on the road and at work

Notes:
1 As of 9. October 2018
3.10 Broadband: NetCom BW

**Total customer growth**

- Approx. 45,000 customers, of which 6,000 commercial and industrial
- Around 11,400 km of fibre optic cable
- Second biggest backbone network in Baden-Württemberg
- Serves 42% of municipalities in Baden-Württemberg
- Integration of customer locations outside Baden-Württemberg (in cooperation with GasLINE)
- NetCom BW fibre-optic network as basis for 5G technology (integrating mobile masts)
3.11 Contracting: Capability portfolio and competitors

**What do we do?**

*EnBW among the top 5 contracting providers in Germany*

**Regions**
- Germany

**Costumers**
- Industry
- Housing sector
- Public sector

**Product/service portfolio**
- **Main focus**: Design-build-operate-finance services for distributed energy systems under energy supply/energy performance contracting
  - Integrated single-source packages, custom tailored
  - Packages linked with additional services such as direct marketing, energy efficiency optimisation, charging infrastructure, photovoltaics/storage systems
  - Operation management and efficient system management e.g. optimisation of system operation
  - Additional services such as networks and energy efficiency

**Media**
- **Heat**: hot water, steam, refrigeration, CHP power, compressed air, ventilation

**Systems/technologies**
- CHP plants, boilers, refrigeration systems, gas turbines, compressed air systems, ventilation systems

**Who are our competitors?**

- Highly fragmented market with > 500 providers, most without primary focus in terms of customer segments and media; occasional takeovers
- **Five main provider groups**
  - Contracting subsidiaries of major energy groups [e.g. E.ON Connecting Energies, MVV Energy Solutions, Enercity/Danpower]
  - Building systems providers/facility management service providers [e.g. Techem and Engie]
  - Municipal utilities
- **Energy groups’ subsidiaries and independent contractors are EnBW’s main competitors** (similar capability portfolio and national presence)
- Independent contractors [e.g. Getec]
- Component manufacturers [e.g. Siemens/Bosch]

**Business area continuously built up over 15 years, positioned as established contracting provider in Germany**
3.12.1 Digitalisation within EnBW

Acceleration of our digital transformation from 2015

› Optimising established processes  
  Goal: future-oriented digital business models

› Technology of digitalisation and driver for the onward development of our core business

› New ways of working, new digital work environments and effective training for managers and employees

Main focuses technology

› Artificial intelligence
› Sensors/Internet of Things
› Blockchain
› Augmented reality

14 digital action plans with 180+ initiatives

30+ initiatives around AI, blockchain and Internet of Things

Significant potential planned in by 2020

About 500 employees actively involved, with around 15 communities
### 3.12.2 Digitalisation: Transformation of added value

#### Value chain

<table>
<thead>
<tr>
<th>Value chain</th>
<th>Impact</th>
<th>Relevant dimensions</th>
<th>Focuses</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CORE BUSINESS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Generation</td>
<td><img src="image" alt="Impact Bar" /></td>
<td>Products &amp; processes</td>
<td>Increased availability Predictive maintenance</td>
</tr>
<tr>
<td>Trading</td>
<td><img src="image" alt="Impact Bar" /></td>
<td>Technology</td>
<td>Automated trading Improved forecasting</td>
</tr>
<tr>
<td>Grids</td>
<td><img src="image" alt="Impact Bar" /></td>
<td>People &amp; organisation (methods)</td>
<td>Optimisation of maintenance Modern customer interaction</td>
</tr>
<tr>
<td>Sales &amp; ops</td>
<td><img src="image" alt="Impact Bar" /></td>
<td></td>
<td>New products Digital customer experience</td>
</tr>
<tr>
<td><strong>NEW BUSINESS</strong></td>
<td></td>
<td></td>
<td>Digital business models Interconnection of customers and systems</td>
</tr>
</tbody>
</table>

- Connected home, e-mobility, VPP, smart cities
3.12.3 Digitalisation case study: NETZdigital

Website

- Fewer clicks, better user experience with fewer pages and navigation levels
- Optimised for use with mobile devices
- Up-to-date NETZ corporate design
- More prominent placement of online services

Online-Services

Improvement in online service use rate
Target rates ~ 50%
Phased approach: Internal first, then external

- Home electricity supply: 12% → 35%
- Site electricity supply: 1% → 18%
- Service entrance mast insulation: 23% → 37%
- Meter reading: 22% → 22%
3.13.1 Research and development: The research process at EnBW

- Science
- New technologies
- Strategy
- Trends
- Business units
- Market

- Viessmann Werke

<< Agenda
3.13.2 Research and development:
Creating know-how for new opportunities

The right skills for future business opportunities
› Emerging technologies
› Game-changing technologies
› New partnerships

Learning by doing:
Pilots and demonstrations with particular focus on
› Sustainable energy provision e.g. offshore wind, green gases
› Critical infrastructure
› Smart city technology

› Explore new solutions
› New skills to succeed for the energy future
› Win public opinion with attractive solutions
› Exciting R&D projects to attract future employees

Expenditure on research, development and innovation
in € m

<table>
<thead>
<tr>
<th>Year</th>
<th>Other¹</th>
<th>Dismantling</th>
<th>Gas</th>
<th>Customer-related research projects</th>
<th>Grids</th>
<th>Generation from renewables</th>
<th>Smart energy world and storage²</th>
<th>Innovation management</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>0.3</td>
<td>0.2</td>
<td>2.3</td>
<td>5.1</td>
<td>3.6</td>
<td>5.1</td>
<td>5.1</td>
<td>21.6</td>
</tr>
<tr>
<td>2017</td>
<td>0.5</td>
<td>1.2</td>
<td>1.2</td>
<td>5.3</td>
<td>3.3</td>
<td>5.3</td>
<td>5.3</td>
<td>21.6</td>
</tr>
</tbody>
</table>

¹ Also includes conventional generation
² Includes, e.g. electromobility and hydrogen
3.14.1 Innovation: The innovation process at EnBW

Corporate start-ups
› Internal development

Incubation
› Business model development
› From idea to market validation

Company builder
› Growth and scaling

Innovation

Innovation portfolio
1. Connected Home
2. Mobility Infrastructure
3. Virtual Power Plant
4. Urban Infrastructure

Start-ups
› Stakes in cooperative ventures

Venturing
› Professional investor
› VC method
› Minority investments

Mergers and acquisitions
› Late stage start-ups
› Majority investments

Source: fotolia, NicoElNino
Innovation management launches
and develops start-up projects through incubation and scaling

Innovation management launches and develops start-up projects through incubation and scaling

3.14.2 Innovation:

16-week incubation programme from October 2018, with 9 EnBW projects at Karlsruhe Innovation Campus. Focus: Business model development

Pre-Seed
Seed
Startup
First Stage 10
Second Stage 50

Incubation
Company builders

Idea to market launch
More mature projects – growth and scaling

5 projects in market launch phase. Focus: Market validation
Including two external startup teams in which EnBW has a stake

Binando – IoT-based digital waste management [https://binando.com/]
Vialytics – artificial intelligence in road management [https://www.vialytics.de/]

4 mature projects in growth phase. Focus: Scaling of sales, production and organisation

LIV-T – spin-off; independent IoT joint venture between EnBW and mantro GmbH [https://www.liv-t.com]
Smight – smart urban infrastructure (traffic monitoring, charging stations, environmental sensors, smart streetlights) [https://smight.com]
Energybase – smart energy management system [https://www.energybase.com/]
WTT Campus One – award-winning digital learning platform, spun off in 2017 [https://www.wtt-campusone.com/]

In total, more than 30 start-up projects launched, tested and scaled in last four years. A number of projects also abandoned.

A number of projects also abandoned.
3.14.3 Innovation: Examples of more mature projects

TTT CampusONE provides web-based tools and learning management system (LMS) platforms for resource management and information and knowledge sharing.

- Other products include e-learning courses, explanatory videos and compact backgrounders.

LIV-T incubates, scales and operates top-tier IoT use cases as a white label enterprise solution. Customer-centric, rapid and efficient development using lean startup methodology.

- Generates revenue from hardware sales and operation of use cases via licence agreement with white label customers (software and services).

SMIGHT develops solutions for charging, wifi, environmental sensors, security and transport that can be integrated into existing or new urban infrastructures.

- Corresponding product portfolio under development in the areas of technology, services and data management.

‘Energybase is a prosumer’ energy management system for smart interconnection and optimisation of electricity generation units, appliances and storage.

- Multiple homes can be actively combined into virtual power stations and energy communities, with central management of energy consumption and storage.

- B2B platform approach for manufacturers and utilities.

- Spin-off in Ludwigsburg
- Joint venture in Munich
- Internal Micro Business Unit in Karlsruhe
- Company builder in Stuttgart
3.14.4 Innovation: Venture capital investment in innovative start-ups

**EnBW New Ventures follows an active portfolio approach**

- Evergreen VC investor with total investment amount of €100 m
- Direct minority stakes, investment in entrepreneurial founder teams
- Open for syndication in a traditional VC approach

**EnBW New Ventures is the open innovation connection between startups and EnBW Group**

- Win-win for both sides, with EnBW New Ventures operating as professional VC investor
- Start-ups gain access to EnBW’s energy market expertise, customers and suppliers of EnBW
- EnBW benefits from fast innovation cycles and growth options
- Cooperative approach to foster business with products and services based on innovative business models

**Current portfolio**

- Smart parking solutions with overhead sensors – real-time parking data for parking operators and guidance systems
- Peer-to-peer energy trading “utility in a box” – software for the decentralised and digitalised energy world
- Data centre resource analysis and virtualisation – software for a transparent view on complex IT infrastructure
- High-temperature superconductors – innovation and high-tech with unique manufacturing approach and high power density
- PV leasing provider – generate and use your own solar power on your rooftop without upfront investment
3.15.1 Corporate Sustainability: Integral part of the strategy

Sustainability at EnBW

- Sustainability dimensions
  - Economic
  - Environmental
  - Social/employees

- EnBW stakeholders
  - Customers
  - Partners
  - Shareholders
  - Communities
  - Investors
  - Politics
  - Employees
  - Society

Sustainability is integrated in

- Corporate strategy
- Non-financial top KPIs and targets
- Stakeholder management
- Risk and opportunity analysis
- Annual reporting
### 3.15.2 Corporate Sustainability: Ratings

<table>
<thead>
<tr>
<th>ISS-oekom</th>
<th>Sustainalytics</th>
<th>Carbon Disclosure Project</th>
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<tbody>
<tr>
<td><strong>2017</strong></td>
<td><strong>2018</strong></td>
<td><strong>2017</strong></td>
</tr>
<tr>
<td>B-</td>
<td>73</td>
<td>A-</td>
</tr>
<tr>
<td>Prime status</td>
<td>Outperformer status</td>
<td>Leadership status</td>
</tr>
</tbody>
</table>

**Major improvements in**
- Products and services
- Corporate governance and business ethics
- Environmental aspects
- Social aspects
- Effective initiatives in the field of climate protection
-Transparent reporting on emissions, opportunities and risks of climate change
### 3.15.3 Corporate Sustainability: Economic, environmental and social performance - Highlights 2017

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ECONOMIC</strong></td>
<td>› Repayment of hybrid bond in the amount of €1 bn</td>
</tr>
<tr>
<td></td>
<td>› Expansion of gas business through first-time full consolidation of VNG</td>
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<tr>
<td></td>
<td>› Start of construction of new district heating plant in Stuttgart-Gaisburg</td>
</tr>
<tr>
<td></td>
<td>› Expansion of charging infrastructure for e-mobility and of broadband business</td>
</tr>
<tr>
<td><strong>ENVIRONMENTAL</strong></td>
<td>› Construction and expansion of 21 onshore wind farms with a total of 204 MW</td>
</tr>
<tr>
<td></td>
<td>› Award of contract for He Dreih 900 MW offshore wind farm in auction</td>
</tr>
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<td></td>
<td>› Participation in the Task Force on Climate-related Financial Disclosures (TCFD)</td>
</tr>
<tr>
<td></td>
<td>› Stimuli for Diversity funding programme for the protection of amphibian and reptile species</td>
</tr>
<tr>
<td><strong>SOCIAL</strong></td>
<td>› “Making it happen” bus with EnBW employees providing support where it is needed</td>
</tr>
<tr>
<td></td>
<td>› Promotion of diversity and inclusion through various measures and events</td>
</tr>
<tr>
<td></td>
<td>› Representative random sample surveys for Employee Commitment Index (ECI)</td>
</tr>
<tr>
<td></td>
<td>› Projects and campaigns on occupational safety and health protection</td>
</tr>
</tbody>
</table>
3.16.1 Decarbonisation: Focusing on sustainability, EnBW supports CO₂-reduced generation with a minimum CO₂ price

EnBW’s position on minimum CO₂ price

- **€25 minimum price specified for 2020** (€30 for 2025)
- **Options for use of additional revenue:**
  - Reduction in electricity tax (≥ 50%)
  - Repurchase of CO₂ certificates

**Introduction of a national CO₂ target price of €25 from 2020 and €30 from 2025**
- This would render significant market based CO₂ reductions economically viable – climate-friendly power plants would be allocated more operating hours. At the same time risks for renewable energy investments would be mitigated.”

**Reduction of electricity tax by at least 50%**
- Most of today’s electricity and energy taxes have no significant impact on carbon emissions.
- Reduction of the electricity tax facilitated with the additional revenue from the minimum price of CO₂; the natural gas tax can be abolished

**Alignment of energy taxes with the CO₂ intensity of the energy source**
- Fundamental reform of the energy tax system: focus on the climate impact of energy sources
- Existing refunds and exemptions remain unaffected
3.16.2 Decarbonisation: Business activities fully geared to attainment of climate targets

Why is EnBW committed to climate action?

› Low-carbon business areas are key growth markets in the energy sector

› EnBW’s strategic goals can be attained with low-carbon activities

› EnBW delivers on its social responsibility for climate action/sustainability

EnBW renewables growth\(^1\)

Adjusted EBITDA in € bn

\[
\begin{array}{c|c}
\text{Year} & \text{Value} \\
\hline
2012 & 0.2 \\
2020 target & 0.7 \\
\end{array}
\]

35.5% of household electricity consumption in Baden-Württemberg can theoretically be served by EnBW’s renewable energy activities

35,000 households (300 GWh/p.a.)

By means of its energy efficiency networks for industrial customers alone, EnBW has delivered annual energy savings equivalent to

\(^1\) Run-of-river power plants, pumped storage power plants with natural inflow, wind power, photovoltaic and other
3.16.3 Decarbonisation: Climate protection goal

- EnBW already clearly committed itself to the "Energiewende" in 2013 with its 2020 strategy. The central focus here in the medium and long-term is low CO$_2$ or zero emission electricity generation.

- The EnBW business model is aligned to the national and international goals for climate protection, such as those defined in the Paris Agreement.

- Increasing the proportion of renewable energies has already been a key performance indicator in the environment goal dimension for managing the company for many years.

- In 2016 the key performance indicators in the environment goal dimension have been supplemented by CO$_2$ intensity. The inclusion of the new key performance indicator CO$_2$ intensity reflects the special importance of climate change as a social, political and also economic challenge for EnBW.

- The calculation basis for the key performance indicator CO$_2$ intensity is the amount of CO$_2$ emissions from own generation of electricity for the Group, as well as the quantity of electricity generated by the Group, without the contribution made by nuclear power plants.

- By discounting the electricity generated by nuclear power plants, the performance indicator will not be influenced by the phasing out of nuclear energy in the coming years.

The goal of EnBW is to actively contribute to climate protection by successively reducing the CO$_2$ intensity of its own electricity generation (excluding nuclear power) by 15 to 20% by 2020 compared to 606 g/kWh in the base year 2015.
3.16.4 Decarbonisation: Climate protection: Key performance indicator „CO₂-Intensity“

The CO₂ intensity of EnBW’s own electricity generation excluding nuclear power fell by 3.6% to 556 g/kWh in comparison to the previous year.

The fall was due to the increased generation from renewable sources in comparison to 2016 and the simultaneous increase in electricity generation from a more efficient mix of fossil fuel-fired power plants, especially the use of unit RDK 8 at the Rheinhafen Steam Power Plant in Karlsruhe.

In 2018, we expect an increase in own electricity generation from renewable energy sources due to further expansion of renewable energies and the increased availability of our highly efficient hard coal power plants such as unit RDK 8.

We anticipate an overall positive development and expect a reduction in the CO₂ intensity by between 10% and 0% in 2018 in comparison to the 2017 reporting year. We expect a further gradual reduction in CO₂ intensity in the years ahead.
3.17.1 Corporate Governance: Responsible and transparent management

EnBW corporate culture

- Board of Management
  - Responsible Group management
  - CEO
  - Finance
  - Personnel, law and compliance, auditing
  - Technology

Supervisory Board

- Managing and supervising
- In accordance with recognised benchmarks
- In harmony with social market economy principals
- Safeguarding continued existence
- Ensuring sustained increase in added value

Transparent & responsible

- Strengthen trust and confidence in
  - Customers
  - Capital providers
  - Employees
  - Public

Long-term success
### 3.17.2 Corporate Governance: Responsible and transparent management

#### Board of Management
- 4 members
- Responsible Group management
- Four remits
  - Finance
  - Personnel, law and compliance
  - Auditing
  - Technology

#### Supervisory Board
- 3 verdi nominees
- 10 employees representatives
- 10 shareholder
- Appoints members of Board of Management
- Advises them on management of the company
- Discusses business performance, planning and corporate strategy together with the Board of Management at regular intervals and ratifies the annual financial statements
- Always involved in decisions of fundamental importance to the company
- Legal transactions and measures subject to the approval of the Supervisory Board are defined in its rules of procedure

#### Annual General Meeting
- Shareholders exercise their rights with regard to company matters at the Annual General Meeting
- The Annual General Meeting passes resolutions on the discharge of Board of Management and Supervisory Board members, the appropriation of earnings and selection of the auditor.
- Resolutions of the Annual General Meeting only require a simple majority of votes in most cases.
- Each bearer share carries one vote.
3.17.3 Corporate Governance:
German Corporate Governance Code

German Corporate Governance Code


- The recent Declaration of Compliance pursuant to section 161 German Stock Corporations Act (AktG), dated 7. December 2017, and the declarations from previous years are published at https://www.enbw.com/privacy-policy/.

Further information


- Supervisory Board: https://www.enbw.com/company/the-group/about-us/supervisory-board/index_en.html


3.18.1 Corporate Governance: Compliance and Data protection

The Compliance Management System, implemented throughout the Group, serves to minimise risks and avoid liability issues and a loss of reputation. It focuses on company and sector-specific risks and priorities and encompasses all controlled companies with employees in the EnBW Group.

Tools used by Compliance:

- Training/workshops
- Code of Conduct
- Focus on culture with a view to the most recent compliance incidents in the German economy
- Detection
- Annual Compliance Risk Assessment
- Ombudsman

These are deemed appropriate for the detection of the risk that there could be a significant violation of the regulations applicable in these areas in good time and with a sufficient degree of certainty, as well as for the prevention of such violations. The effectiveness of the corruption prevention and antitrust law areas of the system have been tested in accordance with the IDW PS 980 testing standard and reaffirmed.
3.18.2 Corporate Governance: Compliance and privacy protection

Number of compliance breaches and suspected cases

- Unresolved material suspected case (2016: 1)
- Material compliance breaches (2016: 4)
- Simple compliance breaches (2016: 10)
- Unresolved simple suspected cases (2016: 4)
- Unsubstantiated suspected cases (2016: 11)

Total: 34

as of 17 January 2018

Number of participants in compliance training events

- New management, personnel / employees
- Sensitive areas
- Management personnel

938, 1,474, 1,274, 778, 754, 962

2013 2014 2015 2016 2017

1 At EnBW AG an directly controlled companies with employees
3.19.1 Data Protection Philosophy

Data Protection Model

- The importance of protecting customers’ and employees’ personal data has been self-evident to EnBW for many decades.
- Data protection is also key to maintaining the trust and confidence that customers place in us every day. New business models (digital/smart solutions) build on that trust.
- The entry into force of the General Data Protection Regulation (GDPR) raised the importance of data protection issues to a new level. Our aim at EnBW is full compliance in data protection at all times:

“Trust keeper” of the data which is owned by the subject.
3.19.2 Data protection in the value chain

This has so far involved:

› Restructuring and assessing some **400 processing operations**
› **120 suppliers** undergoing data protection assessment
› Revision of all **processing operations in customer service** to incorporate the enhanced **rights of data subjects**
› **Training** of over **8,000 employees** (including 450 managerial employees + 1026 employees via on-site training) in application of the new legal framework.
› The head office data protection team **processing** over **2,000 in-house advice requests** in 2017 and 2018, 400 further planning
› 9 Board Meetings, 20 team member from 25 depart
› More than **15 practical application aids** being made centrally available to **20,000 employees** for assistance in their day-to-day work
3.19.3 Organisation of data protection at EnBW

Head of Compliance and data protection

- **DPO**: Data protection officer
- **DPO**: Data protection officer
- **DP staff**: Data protection staff
- **BP**: Business partners digitalisation and data protection

**Centralised part of data protection**

**LDPM**: Local Data Protection Manager

- **LDPM**: Human Resources
- **LDPM**: Trading
- **LDPM**: Generation
- **LDPM**: Nuclear
- **LDPM**: Operation and Sales
- **LDPM**: Grids
- **LDPM**: Other businesses

**Decentralised part of data protection**

---

1. As of 1. October 2018
2. Data Protection Officer under Article 37-39 of the GDPR
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   › Pražská energetika, a. s.
   › Stadtwerke Düsseldorf Group
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   › Key financial indicators

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   › Important links
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### 4.1 Segment overview

<table>
<thead>
<tr>
<th>Sales</th>
<th>Grids</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Adjusted EBITDA 2017:</strong></td>
<td>€300.0 m</td>
</tr>
<tr>
<td><strong>Employees:</strong></td>
<td>3,331</td>
</tr>
<tr>
<td><strong>Activities/products:</strong></td>
<td>Sale of electricity, gas, energy-related services and energy industry billing services; energy efficiency consultancy; cooperation with local authorities; collaboration with public utilities</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Renewable Energies</th>
<th>Generation and Trading</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Adjusted EBITDA 2017:</strong></td>
<td>€331.7 m</td>
</tr>
<tr>
<td><strong>Employees:</strong></td>
<td>1,050</td>
</tr>
<tr>
<td><strong>Activities/products:</strong></td>
<td>Project development and management, construction and operation of renewable energy power plants</td>
</tr>
</tbody>
</table>
4.2 EnBW’s market presence

- EnBW Energie Baden-Württemberg AG, Karlsruhe
- EnBW Ostwürttemberg DonauRies AG, Ellwangen
- Erdgas Südwest GmbH, Karlsruhe
- GasVersorgung Süddeutschland GmbH, Stuttgart
- NaturEnergie+ Deutschland AG, Mühlacker
- NetCom BW GmbH, Ellwangen
- Netze BW GmbH, Stuttgart
- terranets bw GmbH, Stuttgart
- TransnetBW GmbH, Stuttgart
- ZEAG Energie AG, Heilbronn
- Energiedienst AG, Rheinfelden
- Stadtwerke Düsseldorf Group, Düsseldorf
- VNG AG², Leipzig
- Yello Strom GmbH, Cologne
- Pražská energetika a.s.³, Prague
- Borusan EnBW Enerji yatırımları ve Üretim A.Ş⁴

¹ The full list of shareholdings can be found in the notes to the consolidated financial statements under “(36) Additional disclosures”: https://www.enbw.com/enbw_com/downloadcenter/annual-reports/enbw-financial-statements-group-2017.pdf
² Full consolidation 2017.
³ Directly and indirectly held shares.
⁴ Not fully consolidated, accounted for using the equity method.
4.3 Sales: Multi-brand approach (1/2)

- **EnBW** as premium energy brand with focus on the Baden-Württemberg mass market and public authorities. Throughout Germany for energy solutions such as e-mobility and contracting. Following the acquisition of SENEC in January 2018, EnBW now offers the full range of decentralised solutions for the German Energiewende.

- **Yello** is EnBW’s single brand for the German national mass market, providing a viable alternative for every customer. In line with their new slogan, “Mehr als Du denkst”, Yello offers more than just commodity service.

- **Natur Energie Plus** is the national brand for environmentally aware households.

- **NaturEnergie** is Energiedienst’s main brand and one of Germany’s first green energy brands. It is regional, green and 100% hydropower.

- **GasVersorgung Süddeutschland** - partner to municipal utilities, regional energy suppliers and industry in Germany and beyond. In addition to gas and electricity, GVS provides a broad spectrum of energy-related services. Focuses include online business via platform E-Point.
4.3 Sales: Multi-brand approach (2/2)

- PRE as premium energy brand with focus on Prague mass market for electricity and energy solutions.

- Stadtwerke Düsseldorf as a multipurpose supply and disposal company with business activities in the areas energy, water, contracting and waste management.

- VNG is the corporate brand of the VNG Group and stands for a strong group of more than 20 independent companies with more than 1,200 employees, 60 years of gas expertise and a broad-based future-oriented service portfolio in the gas and gas infrastructure sectors.

- goldgas GmbH is one of the leading energy suppliers in Germany. The company from Eschborn supplies gas and electricity to private households, commercial customers, housing organisations, major industrial customers and resellers. In 2008, goldgas was the first independent gas supplier in Germany. In 2012, the company added electric power and eco-power to its portfolio.
4.4 Sales: Market feedback – Brand awareness

<table>
<thead>
<tr>
<th>EnBW</th>
<th>96%</th>
</tr>
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<tbody>
<tr>
<td>Full-line service provider delivering quality and inventiveness made in Baden-Württemberg: electricity, gas, water, energy/environmental services, district/local heating and connected energy solutions (e.g. e-mobility)</td>
<td>Baden-Württemberg Q1/2018</td>
</tr>
<tr>
<td>Fair prices, excellent service and customer participation</td>
<td></td>
</tr>
<tr>
<td>Selected special products with added value</td>
<td></td>
</tr>
<tr>
<td>Retail/business/industrial customers and municipalities/municipal utilities</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>yello</th>
<th>87%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retail customers in Germany</td>
<td>National Q1/2018</td>
</tr>
<tr>
<td>Attractive pricing</td>
<td></td>
</tr>
<tr>
<td>Focus on online sales and service</td>
<td></td>
</tr>
<tr>
<td>Electricity and gas for standard service</td>
<td></td>
</tr>
<tr>
<td>Innovative product bundles</td>
<td></td>
</tr>
<tr>
<td>Selected special products only in cooperation</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Natur Energie Plus</th>
<th>7%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nationwide sustainability brand</td>
<td>National Q1/2018</td>
</tr>
<tr>
<td>Ecological products</td>
<td></td>
</tr>
<tr>
<td>Focus on people</td>
<td></td>
</tr>
<tr>
<td>Enhanced brand awareness in planning</td>
<td></td>
</tr>
</tbody>
</table>
### Sales: Electricity and gas sales

#### EnBW Group: Electricity and gas sales

**in bn kWh**

<table>
<thead>
<tr>
<th></th>
<th>2017</th>
<th>2016</th>
<th>Variance in %</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Electricity sales</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retail and commercial customers (B2C)</td>
<td>122.0</td>
<td>114.8</td>
<td>6.3</td>
</tr>
<tr>
<td>Business and industrial customers (B2B)</td>
<td>23.7</td>
<td>28.2</td>
<td>-16.0</td>
</tr>
<tr>
<td>Trade</td>
<td>83.3</td>
<td>71.6</td>
<td>16.3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>2017</th>
<th>2016</th>
<th>Variance in %</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gas sales</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retail and commercial customers (B2C)</td>
<td>250.1</td>
<td>139.1</td>
<td>79.8</td>
</tr>
<tr>
<td>Business and industrial customers (B2B)</td>
<td>142.0</td>
<td>86.8</td>
<td>63.6</td>
</tr>
<tr>
<td>Trade</td>
<td>142.0</td>
<td>86.8</td>
<td></td>
</tr>
</tbody>
</table>
4.6.1 E-mobility: Overview

>600 AC locations

>120 fast-charging (DC) locations throughout Germany

All locations high-performance with up to 150 kW per DC charging point.
4.6.2 E-mobility: References

**High-power charging**

**Project scope:**
- 34 T&R service stations in Baden-Württemberg each provided with two charging stations (50kW DC)
- Follow-up contract to provide 117 additional T&R service stations throughout Germany with one charging station each (50kW DC)
- High-capacity-ready locations for upgrade path to 150 kW per charging station

**Fast charging infrastructure and digital services**

**Benefits of providing service stations with rapid charging stations**
- Enhances the attractiveness of service stations
- Rapid charging station with two charging points
- Flexible settings (50 kW or 150 kW, CCS, CHAdeMO, Type 2)

**Additional digital services:**
- **Proximity marketing:** provision of mobile content and mobile advertising
- **Smart couponing system:** Free charging vouchers upwards of a specific purchase value
- Partner filling stations included in route planning using EnBW mobility+
4.6.3 E-mobility: Campaigns

E-mobility employee campaign

› 180 BMW i3s handed to EnBW employees in June 2018
› Employees gain first-hand experience of e-mobility
› Offer sold out on first day

E-mobility customer campaign

› Test offer for customers
› yello-branded BMW i3 for 12 months on lease (from € 249) per month
› Over 450 applicants

› Lease offer, optionally for 12 or 24 months
› Cars handed to customers in March/April 2018
4.7.1 Local authorities and municipal utilities: Activity areas

**Shaping and managing great places to live and do business**

- With the necessary big picture view across all areas (communication, energy, mobility, the economy and public life) and a clear understanding of the related current and future challenges for municipal authorities, we advise and support municipalities in Baden-Württemberg and beyond with our products and services. Our priority is to deliver a custom-tailored, future-ready integrated solution for each municipal customer.

**Needs-driven alliances with municipal utilities across Baden-Württemberg**

- Joint entities benefit from EnBW’s longstanding experience and proven full range of services for almost every business process. We have a broad capability portfolio, ranging from technical network operation to IT solutions and from billing to smart energy solutions.

**Efficiently operating and managing municipal infrastructure**

- With over 700 electricity and gas concessions in Baden-Württemberg and the operation of additional infrastructure such as water and broadband networks, longstanding experience and a proven team with local ties throughout the region, EnBW is a highly effective partner to municipalities in Baden-Württemberg.
Municipal infrastructure: efficient and reliable

- Netze BW GmbH, a wholly-owned subsidiary of EnBW and the biggest electricity, gas and water network group in Baden-Württemberg, delivers secure, reliable, efficient and cost-effective utility supply and customer-friendly network service.

- In electricity and gas grids, we serve over 700 municipalities as direct concession holder and partner with over 150 further towns and communities in joint entities.

- Electricity and gas concessions are our main focus, but we are also strong in water supply and broadband infrastructure rollout – the latter with very ambitious growth targets.

- With research activities, state-of-the-art technology and our highly dedicated workforce, we make a major contribution in terms of security of supply and future-ready energy infrastructure, especially in rural regions.

Electricity and gas concessions in Baden-Württemberg (NETZE BW)

- >2 m Electricity grid customers
- >140k Households supplied with gas
4.7.3 Local authorities and municipal utilities

Shaping and managing great places to live and do business in tomorrow’s communities

- We provide a broad portfolio of products and services for shaping great places to live and do business across the region, for all municipal authorities in Baden-Württemberg. With a strong regional footprint, we work closely with municipal and district councils to deliver tailored solutions.

- Our portfolio addresses the key action areas of the future for all communities.
  - From conventional design-build-operate services for broadband, electricity, gas and district heating networks...
  - ... to smart energy and mobility solutions, including for entire neighbourhoods
  - ... and solutions for the public digital space and for public safety

- This enables us to deliver a custom-tailored, future-ready integrated solution for every community.
4.7.4 Local authorities and municipal utilities: Investment portfolio

In numerous joint entities with municipal authorities and utilities we are a driving force in alliances across Baden-Württemberg

- As a minority shareholder in over 100 joint entities, EnBW has deep regional ties throughout Baden-Württemberg.
- Business development in these utilities is shaped by the complementary perspectives and capabilities of their owners (municipal authorities and EnBW).
- With both established capabilities (such as network and operating services) and new business areas (such as broadband and electric mobility), EnBW contributes substantially to the business development and ensuring the long-term viability of utilities and therefore of the entire region.

EnBW investment portfolio in Baden-Württemberg

20% Market share (electricity/gas, by volume) in Baden-Württemberg

€3 bn revenue
4.8.1 Grids: Electricity and gas grids constitute EnBW’s core business

EnBW grid regions

EnBW has a thorough grasp of the grid business

- EnBW and its predecessor companies have been in the grid business for more than 100 years
- Security of supply is our highest priority – which is why we employ modern and tested technologies and maintain an extensive network of service centres
- Efficiency benchmark from most recent regulatory period certifies generally best results for EnBW grids
- High regulatory competence/market competence

Grid business has stabilising effect on portfolio

- Electricity and gas grids are subject to regulation
- Stabilising risk/return mix with stable cash flows

Excluding shareholdings in Energiedienst Holding AG, Erdgas Südwest GmbH, EnBW Ostwürttemberg DonauRies AG and ZEAG Energie AG
### 4.8.2 Grids: Electricity grids

<table>
<thead>
<tr>
<th>Grid Type</th>
<th>Transmission Voltage</th>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transmission grid</td>
<td>Extra-high voltage 380kV</td>
<td>2,200</td>
<td>2,100</td>
</tr>
<tr>
<td></td>
<td>Extra-high voltage 220 kV</td>
<td>1,000</td>
<td>1,100</td>
</tr>
<tr>
<td>Distribution grid</td>
<td>High voltage 110 kV</td>
<td>8,600</td>
<td>8,600</td>
</tr>
<tr>
<td></td>
<td>Medium voltage 30/20/10 kV</td>
<td>45,100</td>
<td>46,500</td>
</tr>
<tr>
<td></td>
<td>Low voltage 0.4 kV¹</td>
<td>94,200</td>
<td>94,300</td>
</tr>
<tr>
<td>Overall length</td>
<td></td>
<td>152,500</td>
<td>151,600</td>
</tr>
</tbody>
</table>

¹The slight decrease in the length of the distribution grid is mainly attributable to concession agreements not being renewed with some municipalities.
4.8.3 Grids: Expansion of transmission grid to ensure security of supply

<table>
<thead>
<tr>
<th>AC grid reinforcement</th>
<th>Grid section</th>
<th>Scheduled completion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 for Rhine river area in Baden</td>
<td>119 km</td>
<td>2023</td>
</tr>
<tr>
<td>2 for north Baden-Württemberg</td>
<td>142 km</td>
<td>2023</td>
</tr>
<tr>
<td>3 for north east Baden-Württemberg</td>
<td>158 / + 56 km</td>
<td>2022 / 2030</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DC expansion</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>4 in corridor C “SuedLink” 4 GW corridor</td>
<td>700 km¹</td>
<td>2025</td>
</tr>
<tr>
<td>5 in corridor A “Ultranet” 2 GW corridor</td>
<td>40 km</td>
<td>2023</td>
</tr>
<tr>
<td>EnBW contribution: converter, power lines in Baden-Württemberg</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Investment up to 2025: around €5 bn

Source: BNetzA, EnBW, NEP 2030 May 2017

¹ In cooperation with TenneT
4.8.4 Grids: Investing in distribution grid to integrate renewables and electric cars whilst securing high quality supply

Challenges and activities

Challenges of the distribution grid in Baden-Württemberg...
› Wide use of PV in the grid area
› High expansion targets for wind power
› Increased emergence of electric cars

... necessitate grid expansion using smart technologies (e.g. controllable local grid station, current peaks storage, etc.)

In addition to expansion of the distribution grids, EnBW is investigating smart distribution grids together with partners in several “grid laboratories”.

Through to 2025, investment of ~€2.5 bn necessary to develop the electricity distribution grid infrastructure in Baden-Württemberg

EnBW grid laboratories and grid innovations

**Grid-lab electric fleets**
Intelligent load management for electric vehicles

**Grid-lab Freiamt**
Further development of innovative equipment

**Grid-lab Niederstetten**
Local grid intelligence

**Grid-lab Sonderbuch**
Integration of renewables in low-voltage grid

**Grid-lab Boxberg and Stockach**
Pilot tests to avoid grid overload

**Bio-oil transformers**
Pilot project with 100 transformers in real grid operation

**grid-control**
Crafting effective ideas for a future-oriented grid
### 4.8.5 Grids: Gas grids

<table>
<thead>
<tr>
<th>EnBW Group’s gas grids</th>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Long-distance transmission grid</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High pressure</td>
<td>8,900</td>
<td>2,000</td>
</tr>
<tr>
<td><strong>Distribution grid</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High pressure</td>
<td>2,500</td>
<td>2,200</td>
</tr>
<tr>
<td>Medium pressure</td>
<td>10,800</td>
<td>7,900</td>
</tr>
<tr>
<td>Low pressure</td>
<td>5,200</td>
<td>4,500</td>
</tr>
<tr>
<td><strong>Overall length</strong></td>
<td>27,400</td>
<td>16,600</td>
</tr>
</tbody>
</table>
4.9.1 EnBW Group in 2017: Generation and portfolio

<table>
<thead>
<tr>
<th>Renewable energies</th>
<th>Own generation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2017 in Mw</td>
</tr>
<tr>
<td>Renewable energies</td>
<td>3,381</td>
</tr>
<tr>
<td>Run-of-river</td>
<td>1,034</td>
</tr>
<tr>
<td>Storage/pumped storage (using natural flow of water)</td>
<td>1,327</td>
</tr>
<tr>
<td>Wind onshore</td>
<td>540</td>
</tr>
<tr>
<td>Wind offshore</td>
<td>336</td>
</tr>
<tr>
<td>Other</td>
<td>144</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>9,673</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Thermal power plants</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Lignite</td>
<td>875</td>
</tr>
<tr>
<td>Hard coal</td>
<td>3,523</td>
</tr>
<tr>
<td>Gas</td>
<td>1,448</td>
</tr>
<tr>
<td>Other</td>
<td>349</td>
</tr>
<tr>
<td>Pumped storage (not using natural flow of water)</td>
<td>545</td>
</tr>
<tr>
<td>Nuclear</td>
<td>2,933</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>13,054</strong></td>
</tr>
</tbody>
</table>
4.9.2 Thermal power plants in 2017¹

<table>
<thead>
<tr>
<th>Conventional in MW</th>
<th>Nuclear in MW</th>
<th>Grid reserve power plants² in MW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Karlsruhe</td>
<td>1,351</td>
<td>Marbach</td>
</tr>
<tr>
<td>Düsseldorf</td>
<td>1,246</td>
<td></td>
</tr>
<tr>
<td>Lippendorf</td>
<td>875</td>
<td>Heilbronn</td>
</tr>
<tr>
<td>Heilbronn</td>
<td>778</td>
<td>Walheim</td>
</tr>
<tr>
<td>Altbach/Deizisau</td>
<td>589</td>
<td>Stuttgart</td>
</tr>
<tr>
<td>Mannheim</td>
<td>546</td>
<td></td>
</tr>
<tr>
<td>Rostock</td>
<td>259</td>
<td>Walheim</td>
</tr>
<tr>
<td>Walsum</td>
<td>250</td>
<td></td>
</tr>
<tr>
<td>Stuttgart</td>
<td>211</td>
<td></td>
</tr>
<tr>
<td>Walheim</td>
<td>136</td>
<td></td>
</tr>
<tr>
<td>Philippsburg</td>
<td>1,402</td>
<td></td>
</tr>
<tr>
<td>Neckarwestheim</td>
<td>1,096</td>
<td></td>
</tr>
<tr>
<td>Fessenheim, Cattenom (France)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

¹ Major power plants, incl. major changes in 2018
² Decommissioning of HLB 5/6, MAR DT III, MAR GT II, MAR GT III, WAL1/2, RDK4s and ALT HKW1 has been announced; continued temporary operation due to system relevance
### 4.9.3 Hydropower plants in 2017¹

<table>
<thead>
<tr>
<th>Run-of-river</th>
<th>Pumped storage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Rhine power plants</strong></td>
<td><strong>Schluchsee power plants</strong></td>
</tr>
<tr>
<td>Neckar, Donau, Murg, Nagold, Enz, Glatt, Jagst, Kocher, Argen</td>
<td>Schluchsee power plants</td>
</tr>
<tr>
<td>Neckar, Donau, Murg, Nagold, Enz, Glatt, Jagst, Kocher, Argen</td>
<td>Schluchsee power plants</td>
</tr>
<tr>
<td>Iller power plants</td>
<td>Vorarlberger Illwerke</td>
</tr>
<tr>
<td>Iller power plants</td>
<td>Illwerke</td>
</tr>
<tr>
<td>EnAlpin</td>
<td>Glems</td>
</tr>
<tr>
<td>EnAlpin</td>
<td>Rudolf-Fettweis-Werk Forbach</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Run-of-river in MW</th>
<th>Pumped storage in MW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rhine power plants</td>
<td>Schluchsee power plants</td>
</tr>
<tr>
<td>Neckar, Donau, Murg, Nagold, Enz, Glatt, Jagst, Kocher, Argen</td>
<td>Schluchsee power plants</td>
</tr>
<tr>
<td>Neckar, Donau, Murg, Nagold, Enz, Glatt, Jagst, Kocher, Argen</td>
<td>Schluchsee power plants</td>
</tr>
<tr>
<td>Iller power plants</td>
<td>Vorarlberger Illwerke</td>
</tr>
<tr>
<td>Iller power plants</td>
<td>Vorarlberger Illwerke</td>
</tr>
<tr>
<td>EnAlpin</td>
<td>Glems</td>
</tr>
<tr>
<td>EnAlpin</td>
<td>Rudolf-Fettweis-Werk Forbach</td>
</tr>
</tbody>
</table>

¹ Incl. major changes in 2018
4.10.1 Offshore wind: Portfolio and project pipeline

- Installed capacity 2018: 336 MW
- Under construction: 609 MW
- Secured pipeline: 900 MW

EnBW Hohe See: 497 MW
EnBW Albatros: 112 MW

EnBW Baltic 1: 48.3 MW
EnBW Baltic 2: 288 MW

EnBW He Dreiht: ~ 900 MW
### 4.10.2 Offshore wind: Windfarms in operation

<table>
<thead>
<tr>
<th>Country</th>
<th>Germany</th>
<th>Germany</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology</td>
<td>Offshore Wind</td>
<td>Offshore Wind</td>
</tr>
<tr>
<td>Type of turbine</td>
<td>21 x Siemens SWT 2.3-93</td>
<td>80 x Siemens SWT 3.6-120</td>
</tr>
<tr>
<td>Total capacity</td>
<td>48.3 MW</td>
<td>288 MW</td>
</tr>
<tr>
<td>Shareholders</td>
<td>50.1 % EnBW ~49.9 % 19 municipal utilities</td>
<td>50.1 % EnBW ~49.9 % Macquarie, PGGM &amp; ÄvWL</td>
</tr>
<tr>
<td>Commissioned</td>
<td>April 2011</td>
<td>September 2015</td>
</tr>
<tr>
<td>Feed-in tariff</td>
<td>EEG 2009</td>
<td>EEG 2012</td>
</tr>
</tbody>
</table>
### 4.10.3 Offshore wind: Offshore windfarms under construction

<table>
<thead>
<tr>
<th></th>
<th>EnBW Hohe See</th>
<th>EnBW Albatros</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Country</strong></td>
<td>Germany</td>
<td>Germany</td>
</tr>
<tr>
<td><strong>Technology</strong></td>
<td>Offshore Wind</td>
<td>Offshore Wind</td>
</tr>
<tr>
<td><strong>Type of turbine</strong></td>
<td>71 x Siemens SWT 7.0-154</td>
<td>16 x Siemens SWT 7.0-154</td>
</tr>
<tr>
<td><strong>Total capacity</strong></td>
<td>497 MW</td>
<td>112 MW</td>
</tr>
<tr>
<td><strong>Shareholders</strong></td>
<td>50.1 % EnBW ~49.9 % Enbridge Inc.</td>
<td>50.1 % EnBW ~49.9 % Enbridge Inc.</td>
</tr>
<tr>
<td><strong>Commissioning</strong></td>
<td>2019</td>
<td>2019</td>
</tr>
<tr>
<td><strong>Feed-in tariff</strong></td>
<td>EEG 2014</td>
<td>EEG 2014</td>
</tr>
</tbody>
</table>
4.10.4 Offshore wind: EnBW presence in Taiwan

Offshore wind market Taiwan
- Market development up to 5.5 GW by 2025
- Long term goals of cumulative 11 GW by 2035 and 21 GW by 2050

Established EnBW Asia Pacific Ltd.
- Located in Taipei
- Building-up a Service JV and enhancing EnBW’s local presence

Development of Formosa3-pipeline
- Project development together with Macquarie Capital and Swancor Renewables
- Three offshore wind projects of up to 2GW capacity
- Several permits (e.g. EIA approval) obtained
- Water depths between 35m to 55m

Formosa 3
- 11. MACQUARIE 552 MW
- 16. EnBW 732 MW
- 17. Swancor 720 MW
4.10.5 Offshore wind: Project development activities in North America

**Corporate Structure**

- EnBW AG
- EnBW North America Inc.
  - Castle Wind
  - East Wind

**US West Coast (California)**

- Joint venture between local floating offshore wind project developer Trident Winds and EnBW (majority shareholder)
- First development of a commercial floating offshore wind project in USA
- California renewable energy generation target of ~60% by 2030

**US East Coast**

- Local subsidiary legally established and in operation with local staff by Q4 2018
- Project company established for future participation in offshore wind lease auctions
- U.S. offshore wind expansion target of at least 8 GW by 2030
4.11.1 Onshore wind portfolio: Project pipeline 2018 in line with plans for growth up to 2020

Regional distribution of the 2018 pipeline and portfolio

- **Project initiation phase**: Negotiations for land contracts (low proportion make it to project development);
- **Project development**: At least land contracts concluded (large proportion are completed);
- **In operation**: Wind parks in operation with EnBW majority shareholding

### As of 31 July 2018

- **Portfolio**
  - **Project initiation phase**: 480
  - **Project development**: 1,140
  - **Under construction**: 2,360
  - **In operation**: 3,980

### Forecast 2020

- **Portfolio**
  - **Project initiation phase**: 1,000
  - **Project development**: 1,050
  - **Under construction**: 1,500
  - **In operation**: 3,550

---

1. Negotiations for land contracts (low proportion make it to project development);
2. At least land contracts concluded (large proportion are completed);
3. Wind parks in operation with EnBW majority shareholding
## Onshore wind: Installed wind farms (1/7)

<table>
<thead>
<tr>
<th>Country</th>
<th>Aalen-Waldhausen</th>
<th>Alt Zeschdorf</th>
<th>Berghülen</th>
<th>Boxberg-Angeltürn</th>
<th>Boxberg-Bobstadt</th>
<th>Boxberg-Oberschüpf</th>
<th>Braunsbach</th>
</tr>
</thead>
<tbody>
<tr>
<td>Country</td>
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## 4.11.2 Onshore wind: Installed wind farms (2/7)

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1 Temporary regulations
### Onshore wind: Installed wind farms

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<th>Dittelsdorf III</th>
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<th>Düsedau</th>
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4.11.2 Onshore wind: Installed wind farms (4/7)

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### 4.11.2 Onshore wind: Installed wind farms (6/7)

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### 4.11.2 Onshore wind: Installed wind farms (7/7)

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## 4.11.3 Onshore wind: Windfarm under construction

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<td>Feed system</td>
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4.12 Activities in Turkey\(^1\): Borusan EnBW Energy portfolio projects

\(^1\) Figures not consolidated
4.13 EnBW’s trading activities: Central access to wholesale markets to manage price and volume risks

Central interface to wholesale commodity markets for customers and EnBW Group:

- Power, gas, emissions, coal, fuels
- Direct marketing renewables 2018 4,500 MW
- 500,000+ trades per year
- 200+ employees

Annual trading volumes, 2017:

- Power: 640 TWh
- Natural gas: 750 TWh
- Coal: 60 mn t
- Emission certificates: 215 mn t
- Oil: 110 mn bbl

- Marketing electricity from renewable and conventional sources, including for customers and partners, 24/7 service
  - Provision of “Energiewende products”
  - Guarantees of origin
  - Direct marketing of renewables
  - Virtual power plants with close-to-delivery flexibility
- Procurement and risk management for EnBW sales companies and support for their electricity and gas customers
- Risk management and commercial optimisation of flexible gas portfolio with physical gas storage and supply contracts
- OTC access for power to NL, FR, CH, AT, CZ, [HU, IT]
- OTC access for gas: TTF, Gaspool [H/L], NCG [H/L], AT VTP, IT, [FR]
- Active on major power and commodity exchanges including EEX (Leipzig), ICE (London) PEGAS (Paris) and EPEX Spot (Paris), as well as on OTC markets where we trade with 150+ counterparties.
1. EnBW at a glance ........................................................................ page 3 ▶
   › Key financials
   › Key non-financials

2. Environment ................................................................................ page 6 ▶
   › Political environment
   › Regulatory environment
   › Markets

3. Strategy ........................................................................................ page 38 ▶
   › EnBW 2020 Strategy
   › EnBW 2025 Strategy
   › Further strategic aspects:
     Broadband, Contracting, Research and Development,
     Innovation, Digitalisation, Corporate Sustainability,
     Decarbonisation, Corporate Governance,
     Compliance, Data Protection

4. Segments ....................................................................................... page 76 ▶
   › Sales
   › Grids
   › Renewable Energies
   › Generation and Trading

5. EnBW’s Main Shareholdings ....................................................... page 114 ▶
   › EnergieDienst Holding AG
   › Pražská energetika, a. s.
   › Stadtwerke Düsseldorf
   › VNG Verbundnetz Gas AG

6. Key Financials and Non-financials ............................................ page 131 ▶
   › Five-year summary
   › Fiscal year 2017
   › Half year 2018
   › Finance strategic and other goal dimensions

7. Capital Markets ........................................................................... page 143 ▶
   › Asset Liability Management Model
   › Bonds
   › Maturity profile
   › Credit Ratings
   › Shareholder structure
   › Share
   › Key financial indicators

8. Service .......................................................................................... page 155 ▶
   › Financial calendar
   › Important links
   › Contact details
5.1 EnBW’s Main Shareholdings

1. Stadtwerke Düsseldorf Group
   Düsseldorf

2. Pražská energetika a.s.
   Prague

3. VNG AG
   Leipzig

4. Energiedienst Holding AG
   Laufenburg

5. Baden-Württemberg

1 The full list of shareholdings can be found in the notes to the consolidated financial statements under "(36) Additional disclosures": https://www.enbw.com/enbw_com/downloadcenter/annual-reports/enbw-financial-statements-group-2017.pdf

2 Full consolidation 2017.

3 Directly and indirectly held shares.
5.2.1 Energiedienst Holding AG

Established 1908

Employees 994

Location Laufenburg, Switzerland

Profile

- Energiedienst generates green electricity from hydropower and sells electricity and gas. The group’s own grid companies supply customers with electricity.

- In addition, Energiedienst is growing in new business areas for tomorrow’s world of decentralised, renewable and digital energy. The group drives the Energiewende for customers by providing smart interconnected products and services, including solar panels, heat pumps, electricity storage systems and electric mobility together with car sharing.

Alexander Lennemann

- Alexander.Lennemann@energiedienst.de
- 07623 92 2660
- www.energiedienst.de
### 5.2.2 Energiedienst Holding AG at a glance

**Spanning the Swiss & German markets**
- Run-of-river power plants with 546 MW installed capacity
- Approximately 8,200 km low-voltage grid
- Around 270,000 electricity and gas customers
- 994 employees

**Sound investment with potential**
- Stable cash flows in traditional businesses
- Clear strategic focus on developing new businesses

**Additional figures**
- Net revenue: €889 m
- EBIT: €45.6 m (after €11 m one-off effect in 2017)
- Net profit: €30.6 m
- Free cash flow: €25.3 m
- Equity ratio: 52.6%

### Three Business Segments

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<thead>
<tr>
<th>Germany BU</th>
<th>Energy industry/generation</th>
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<th>Sales</th>
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<td>New Business Areas BU</td>
<td>Photovoltaic</td>
<td>Heat and energy solutions</td>
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<td>Switzerland BU</td>
<td>Energy industry/generation</td>
<td>Distribution</td>
<td>Sales</td>
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</tbody>
</table>

---

1 Figures as of 31 December 2017
5.2.3 Energiedienst Holding AG: Current key topics and projects

**New top-level organization**
Three BUs from mid-2017: Germany, Switzerland, New Business Areas

**New Business Areas**
Development and marketing of smart interconnected products and services based on photovoltaics

The Energiedienst Group also gained additional support in heat and energy solutions with the acquisition of its shareholding in Messerschmid Energiesysteme GmbH.

**E-mobility**
Expansion of charging station infrastructure and e-car sharing in southern Baden and in Switzerland

**Concessions**
Applications are underway for multiple electricity concessions

**Power-to-gas**
Flagship project at Wyhlen hydropower plant to produce hydrogen as fuel

**Power-to-liquid**
Pilot project at Laufenburg hydropower plant to produce synthetic diesel by producing hydrogen and adding CO₂

**Digital roadmap**
Digitalisation as a key component in strategy implementation
5.3.1 Pražská energetika, a. s.

Established
1897

Employees
1,449

Location
Prague, CZ

Profile
- Electricity distribution in Prague
- Electricity and gas supplies to all customer segments in the Czech Republic; focus on B2C segment in Prague
- Renewable generation (focus on photovoltaics)

Mgr. Petr Holubec
- +420 602 265 790
- www.pre.cz
5.3.2 Pražská energetika, a. s. at a glance

**Number 3 utility in the Czech Rep.**
- 6,288 GWh electricity distributed
- Stable shareholder structure
- 1,449 employees
- Strong roots in Prague

**Balanced risk-return profile**
**Focus on**
- Distribution (~60% EBITDA) and
- Electricity and gas supply (~30% EBITDA)

**Key figures**
- Revenues: CZK 19,369 m
- Adj. EBITDA: CZK 4,755 m
- Group net profit: CZK 2,960 m

---

**Three Business Segments**

- **Sales**
- **Grids**
- **Renewable Energies and energy services**

---

1 Figures as of 31 December 2017
5.3.3 Pražská energetika, a. s.: Current key topics and projects

**E-mobility**
- Expansion of public charging network
- B2B and B2C private charging solutions
- Provision of integrated e-mobility solutions (for OEMs, B2B, B2C), i.e. chargers, commodity, billing, cars (with partner)

**Fibre**
- Synergetic development of electricity and fibre grid
- Backbone for smart grid applications
- Provision of fiber infrastructure for telco retail partners (FTTH)

**Smart city**
- Digitisation of network operation; upgrade to smart distribution stations
- Installation of multifunctional smart lamps (SMIGHT)
- E-carsharing pilot in Prague
- Multi-commodity measuring in buildings

**Energy services**
- Installation of roof-top solar systems incl. storage
- Installation of heating, ventilation and AC systems
- Servicing of local distribution networks
### Renewable Energies / Energy services

- **Adjusted EBITDA 2017:** CZK 352 m
- **Employees:** 240
- **Activities/products:** Energy-related services; project development and management; construction and operation of renewable energy power plants (PVs); energy efficiency consultancy; e-mobility services; operation of local distribution networks

### Pražská energetika, a. s.: Segment overview

#### Sales

- **Adjusted EBITDA 2017:** CZK 1,401 m
- **Employees:** 629
- **Activities/products:** Sale of electricity and gas; focus on customer retention in Prague (PRE brand) and growth outside of Prague (Yello brand)

#### Grids

- **Adjusted EBITDA 2017:** CZK 3,002 m
- **Employees:** 580
- **Activities/products:** Distribution of electricity; provision of grid-related services; guaranteeing security of supply and system stability
5.4.1 Stadtwerke Düsseldorf Group

**Established**
20. September 1866

**Employees**
3,255

**Location**
Düsseldorf, Germany

**Profile**
- City energy utility: Electricity, gas, water and district heating
- Demand-driven development of interconnected urban infrastructure in the fields of energy, mobility and buildings

**Carsten Capari**
Business Accounting and Finances
- info@swd-ag.de
- www.swd-ag.de
5.4.2 Stadtwerke Düsseldorf Group at a glance

Key figures

- Revenue: €1,741 m
- EBITDA: €197 m
- Net profit: €79 m
- Equity: €716 m
- Equity ratio: 37%
- Total assets: €1,935 m

Five Business Segments

1 Figures as of 31 December 2017
## 5.4.3 Stadtwerke Düsseldorf Group: Segment overview

### Electricity
- **Revenue:** €1,109 m
- **Business area:** Generation, Trading, Grids\(^1\), Sales
- **Production:** 24,171 m kWh
- **Installed capacity:**
  - conventional: 895 MWel
  - renewable: 29 MWel

### Gas
- **Revenue:** €260 m
- **Business area:** Generation, Grids\(^1\), Sales
- **Production:** 9,262 m kWh

### District heating
- **Revenue:** €82 m
- **Business area:** Generation, Grids\(^1\), Sales
- **Production:** 1,178 m kWh
- **Installed capacity:**
  - conventional: 855 MWel

### Water
- **Revenue:** €92 m
- **Business area:** Generation, Grids\(^1\), Sales
- **Production:** 51 m m³

### Waste
- **Revenue:** €185 m
- **Business area:** Thermal waste treatment
- **Production:** 434 kt

### Others
- **Revenue:** €13 m
- **Business area:** Services
5.4.4 Stadtwerke Düsseldorf Group: Current key topics and projects

**Business development**

- Systematic optimisation of our sustainable generation infrastructure
- Focus among other things on creating a smart district heating system for the City of Düsseldorf for enhanced efficiency and customer friendliness
  - The heart of this district heating system is the Fortuna plant
  - Electricity and heat are produced using climate-friendly cogeneration technology and natural gas as a low-carbon energy source
  - Düsseldorf Airport will be connected to the district heating system by the end of 2019

**Optimisation of conventional business**

- Pace
- Development

**Creation of new possibilities for**

- Optimisation of conventional business
- New business areas

**Digitalisation**

**Decentralisation of energy generation**

**Impact on**

- New business areas

- A successful product, the “eddy” e-scooter hit Düsseldorf’s streets in 2017
- Emission-neutral transport reducing congestion and powered by green electricity for lower environmental impact
- Eddy is a prime example of modern sector coupling (electricity, heating/climate action and mobility)
- Number of scooters increased due to strong plugging demand (https://eddy-sharing.de/)
- ADAC automobile club test: Top marks for scooter sharing
The VNG Group, with headquarters in Leipzig, is active in gas exploration, production, transport and storage, as well as trading in gas, electric power and energy-related services.

With companies in Germany and other European countries, the group’s gas industry expertise covers the entire value stream from the gas field to the consumer.
5.5.2 VNG AG at a glance

### Exploration & Production business area
- 34 production licenses (32 in Norway, 2 in Denmark)
- Five participations in producing fields (Njord, Draugen, Hyme, Brage, Ivar Aasen)
- Three licenses as operator
- Three fields under development (Fenja, Bauge, Solsort)

### Storage business area
- Third-largest storage facility operator in Germany
- Four underground storage facilities (Bad Lauchstädt, Bernburg, Kirchheilingen, Etze)
- 2.4 bn m³ storage capacity

### Trading & Sales business area
- Wholesale and Retail divisions in Germany and Europe
- 533 bn kWh gas send-out
- Germany: 237,000 power and gas consumers
- Austria: 53,000 power and gas consumers
- 8 sales offices in Germany (Berlin, Düsseldorf, Erfurt, Frankfurt/Main, Hamburg, Leipzig, Munich, Stuttgart)

### Transport business area
- As an independent transmission operator, ONTRAS is responsible for Germany’s second-longest gas transmission system
- 7,000 km high-pressure gas pipeline system
- 450 network interconnection points
- 130 downstream network operators

<table>
<thead>
<tr>
<th>Revenue:</th>
<th>€10.3 bn</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investment result:</td>
<td>€46 m</td>
</tr>
<tr>
<td>Adjusted EBIT:</td>
<td>€129 m</td>
</tr>
<tr>
<td>EBIT:</td>
<td>€103.4 m</td>
</tr>
<tr>
<td>Group net profit:</td>
<td>€71 m</td>
</tr>
</tbody>
</table>

---

1 Figures as of 31 December 2017
5.5.3 VNG AG: Current key topics and projects (1/2)

Core business

**Exploration & Production**
- Continuation of measures to increase value (e.g., development of Fenja)
- Focus on further development considering the factors value maximization, risk diversification, conservation of capital and maintaining fungibility

**Trading & Sales**
- Optimisation of its market position in terms of procurement and sales
- Focus on the development of midstream excellence and moderate growth in retail business
- Digitalisation of processes and market access

**Storage**
- Focus on the aim of being cost and innovation leader
- Development of a service business for third parties

**Transport**
- Increasing implementation of new business segments and continuous optimisation in the regulatory framework (e.g., efficiency improvements)
- Develop comprehensive expertise in the field of green gas infrastructure
- Invests in biogas, natural gas mobility, P2G and energy efficiency products
5.5.4 VNG AG: Current key topics and projects (2/2)

New business

Biogas
- Increasing the share of “green” gas and alternative energies
- Main focus on acquisition and optimisation of plants as well as extension of the value stream

District solutions
- Developing integrated local solutions with advanced network infrastructure in an approach which is independent of individual manufacturers

Digital infrastructure & digital platforms
- Becoming a leading independent provider of critical infrastructure-based data services
- Developing platforms like “effizienzcloud”

Innovations and start-up-activities
- Implementation of group-wide innovation process
- Gaining entrepreneurial impetus from subsidiary VNG Innovation and via partnership with SpinLab
### 6.1 Five-year summary (1/2)

**EnBW Group**

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Earnings</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Revenue (€ m)</td>
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<td>21,167</td>
<td>21,003</td>
<td>20,545</td>
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<td>EBITDA (€ m)</td>
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<td>1,939</td>
<td>1,918</td>
<td>2,137</td>
<td>2,000</td>
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<tr>
<td>Group net profit</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(€ m)</td>
<td>2,054</td>
<td>-1,797</td>
<td>158</td>
<td>-466</td>
<td>51</td>
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<tr>
<td><strong>Balance sheet</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equity ratio (%)</td>
<td>15.1</td>
<td>8.3</td>
<td>13.4</td>
<td>11.9</td>
<td>17.0</td>
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<tr>
<td>Net debt (€ m)</td>
<td>8,459.5</td>
<td>10,046.0</td>
<td>6,736</td>
<td>7,983</td>
<td>7,271</td>
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<tr>
<td><strong>Cash flow</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating cash flow (€ m)</td>
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<td>474</td>
<td>1,918</td>
<td>1,776</td>
<td>1,919</td>
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<tr>
<td>Free cash flow (€ m)</td>
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<td>652</td>
<td>330</td>
<td>1,168</td>
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<td><strong>Profitability</strong></td>
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<tr>
<td>ROCE (%)</td>
<td>7.3</td>
<td>7.8</td>
<td>9.5</td>
<td>10.0</td>
<td>9.7</td>
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<tr>
<td>Value added (€ m)</td>
<td>152</td>
<td>123</td>
<td>354</td>
<td>376</td>
<td>180</td>
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<td><strong>Capital markets</strong></td>
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<td></td>
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<tr>
<td>Dividend per share</td>
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<td>0.00</td>
<td>0.55</td>
<td>0.69</td>
<td>0.69</td>
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<tr>
<td><strong>Energy sales</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electricity (bn kWh)</td>
<td>122</td>
<td>115</td>
<td>115</td>
<td>126</td>
<td>128</td>
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<tr>
<td>Gas (bn kWh)</td>
<td>250</td>
<td>139</td>
<td>135</td>
<td>117</td>
<td>100</td>
</tr>
</tbody>
</table>

1 The figures for the previous year have been restated;
2 In relation to profit/loss attributable to the shareholders of EnBW AG;
3 Includes investments held as financial assets
6.1 Five-year summary (2/2)

### EnBW Group

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Sales segment</strong></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td><strong>Electricity</strong></td>
<td>bn kWh</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sales</td>
<td>40</td>
<td>44</td>
<td>48</td>
<td>48</td>
<td>52</td>
</tr>
<tr>
<td>Gas</td>
<td>57</td>
<td>54</td>
<td>82</td>
<td>72</td>
<td>69</td>
</tr>
<tr>
<td>Revenue</td>
<td>€ m</td>
<td>7,354</td>
<td>7,771</td>
<td>9,061</td>
<td>9,067</td>
</tr>
<tr>
<td>Adjusted EBITDA</td>
<td>€ m</td>
<td>330</td>
<td>250</td>
<td>255</td>
<td>231</td>
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<tr>
<td><strong>Grids segment</strong></td>
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<tr>
<td><strong>Electricity sales</strong></td>
<td>bn kWh</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Revenue</td>
<td>€ m</td>
<td>7,472</td>
<td>6,644</td>
<td>6,351</td>
<td>6,231</td>
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<tr>
<td>Adjusted EBITDA</td>
<td>€ m</td>
<td>1,046</td>
<td>1,004</td>
<td>747</td>
<td>886</td>
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<td><strong>Renewable Energies segment</strong></td>
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<tr>
<td><strong>Electricity sales</strong></td>
<td>bn kWh</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Revenue</td>
<td>€ m</td>
<td>508</td>
<td>511</td>
<td>447</td>
<td>407</td>
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<tr>
<td>Adjusted EBITDA</td>
<td>€ m</td>
<td>332</td>
<td>295</td>
<td>287</td>
<td>191</td>
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<tr>
<td><strong>Generation &amp; Trading segment</strong></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td><strong>Electricity sales</strong></td>
<td>bn kWh</td>
<td>80</td>
<td>68</td>
<td>65</td>
<td>75</td>
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<tr>
<td>Gas sales</td>
<td>bn kWh</td>
<td>193</td>
<td>85</td>
<td>53</td>
<td>45</td>
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<tr>
<td>Revenue</td>
<td>€ m</td>
<td>6,631</td>
<td>4,434</td>
<td>5,300</td>
<td>5,290</td>
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<tr>
<td>Adjusted EBITDA</td>
<td>€ m</td>
<td>377</td>
<td>337</td>
<td>777</td>
<td>900</td>
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</table>

1. The figures for the previous year have been restated.
2. Since the beginning of 2015, electricity sales from the Grids segment are no longer disclosed because the Independent Transmission Operators (ITO) no longer report their data.
## 6.2.1 Fiscal year 2017: Key performance figures

### Key performance figures

<table>
<thead>
<tr>
<th></th>
<th>2017</th>
<th>2016</th>
<th>Change in %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash flow from operating activities € m</td>
<td>-1,696.1</td>
<td>473.6</td>
<td>-</td>
</tr>
<tr>
<td>Free cash flow € m</td>
<td>-2,789.0</td>
<td>-494.7</td>
<td>-</td>
</tr>
<tr>
<td>Equity ratio %</td>
<td>15.1</td>
<td>8.3</td>
<td>-</td>
</tr>
<tr>
<td>Net debt € m</td>
<td>8,459.5</td>
<td>10,002.9</td>
<td>-15.8</td>
</tr>
<tr>
<td>Internal financing capability %</td>
<td>111.9</td>
<td>72.1</td>
<td>55.2</td>
</tr>
<tr>
<td>Value added € m</td>
<td>151.5</td>
<td>123.4</td>
<td>22.8</td>
</tr>
<tr>
<td>ROCE %</td>
<td>7.3</td>
<td>7.8</td>
<td>-</td>
</tr>
<tr>
<td>Group net profit € m</td>
<td>2,176.3</td>
<td>-1,797.2</td>
<td>-</td>
</tr>
<tr>
<td>Earnings per share from Group net profit/loss €</td>
<td>7.58</td>
<td>-6.64</td>
<td>-</td>
</tr>
</tbody>
</table>

---

1 The figures for the previous year have been restated.
2 In relation to the profit/loss attributable to the shareholders of EnBW AG.
6.2.2 Fiscal year 2017: ROCE and value added

**Group level**

- Decrease value added at €151.5 m (2016: € 123.8 m)
- ROCE at 7.3 % compared to 7.8 % in the prior year
- Increase in average capital employed

<table>
<thead>
<tr>
<th>Value added 2017 by segment</th>
<th>Sales</th>
<th>Grids</th>
<th>Renewable Energies</th>
<th>Generation &amp; Trading</th>
<th>Other / Consolidation</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adj. EBIT incl. investment result</td>
<td>€ m</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td>262.8</td>
<td>686.8</td>
<td>164.9</td>
<td>-27.0</td>
<td>21.2</td>
<td>1,108.7</td>
</tr>
<tr>
<td>2016</td>
<td>193.2</td>
<td>668.2</td>
<td>130.1</td>
<td>44.8</td>
<td>40.2</td>
<td>1,076.5</td>
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<tr>
<td>Difference</td>
<td>70.1</td>
<td>-11.4</td>
<td>-65.2</td>
<td>-71.8</td>
<td>35.6</td>
<td>-17.6</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Average capital employed</th>
<th>€ m</th>
<th></th>
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<th></th>
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</thead>
<tbody>
<tr>
<td>2017</td>
<td>836.8</td>
<td>5,919.2</td>
<td>3,276.9</td>
<td>2,242.4</td>
<td>2,870.8</td>
<td>15,146.1</td>
</tr>
<tr>
<td>2016</td>
<td>619.7</td>
<td>5,108.5</td>
<td>2,996.9</td>
<td>2,072.8</td>
<td>2,944.1</td>
<td>13,760.9</td>
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<tr>
<td>Difference</td>
<td>217.1</td>
<td>810.7</td>
<td>279.2</td>
<td>171.6</td>
<td>96.7</td>
<td>166.2</td>
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</table>

<table>
<thead>
<tr>
<th>ROCE</th>
<th>%</th>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>31.4</td>
<td>11.6</td>
<td>5.0</td>
<td>-1.2</td>
<td>-</td>
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</tr>
<tr>
<td>2016</td>
<td>31.2</td>
<td>13.1</td>
<td>4.3</td>
<td>2.2</td>
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<tr>
<td>Difference</td>
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<td>-1.5</td>
<td>-4.2</td>
<td>-3.2</td>
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<table>
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<tr>
<th>WACC</th>
<th>%</th>
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<td>2017</td>
<td>7.7</td>
<td>5.4</td>
<td>6.1</td>
<td>8.0</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td>8.3</td>
<td>5.8</td>
<td>7.5</td>
<td>8.4</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Difference</td>
<td>-0.6</td>
<td>-0.4</td>
<td>-0.5</td>
<td>-0.4</td>
<td>-</td>
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<table>
<thead>
<tr>
<th>Value added</th>
<th>€ m</th>
<th></th>
<th></th>
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<th></th>
<th></th>
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<tr>
<td>2017</td>
<td>198.3</td>
<td>367.0</td>
<td>-36.0</td>
<td>-206.3</td>
<td>-</td>
<td>151.5</td>
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<td>2016</td>
<td>141.9</td>
<td>372.9</td>
<td>-95.9</td>
<td>-128.5</td>
<td>-</td>
<td>123.8</td>
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<tr>
<td>Difference</td>
<td>56.4</td>
<td>4.1</td>
<td>59.9</td>
<td>26.8</td>
<td>-</td>
<td></td>
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</table>

1 The figures for the previous year have been restated
### 6.2.3 Fiscal year 2017: Segment reporting (1/2)

#### Segment reporting

<table>
<thead>
<tr>
<th></th>
<th>Sales</th>
<th>Grids</th>
<th>Renewable Energies</th>
<th>Generation &amp; Trading</th>
<th>Other / Consolidation</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Revenue</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>External revenue</td>
<td>7,354.3</td>
<td>7,771.1</td>
<td>7,471.8</td>
<td>6,643.7</td>
<td>507.5</td>
<td>510.6</td>
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<tr>
<td>Internal revenue</td>
<td>921.1</td>
<td>431.4</td>
<td>2,558.6</td>
<td>2,639.0</td>
<td>281.3</td>
<td>272.4</td>
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<tr>
<td>Total revenue</td>
<td>8,275.4</td>
<td>8,202.5</td>
<td>10,030.4</td>
<td>9,282.7</td>
<td>9,370.3</td>
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<td><strong>Earnings indicators</strong></td>
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<tr>
<td>Adjusted EBITDA</td>
<td>330.0</td>
<td>249.7</td>
<td>1,045.9</td>
<td>1,004.1</td>
<td>331.7</td>
<td>295.3</td>
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<td>EBITDA</td>
<td>317.8</td>
<td>177.1</td>
<td>1,025.3</td>
<td>897.2</td>
<td>622.5</td>
<td>293.8</td>
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<td>Depreciation and amortisation</td>
<td>-68.2</td>
<td>-56.5</td>
<td>-435.4</td>
<td>-367.2</td>
<td>-160.4</td>
<td>-153.2</td>
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<td>Impairment losses</td>
<td>-8.6</td>
<td>-44.2</td>
<td>-0.8</td>
<td>-2.9</td>
<td>-13.5</td>
<td>-11.8</td>
</tr>
<tr>
<td>Net profit/loss from entities accounted for using the equity method</td>
<td>3.7</td>
<td>0.0</td>
<td>29.8</td>
<td>12.9</td>
<td>-4.4</td>
<td>-16.5</td>
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<tr>
<td>Significant non-cash items</td>
<td>31.2</td>
<td>22.0</td>
<td>27.2</td>
<td>16.8</td>
<td>2.8</td>
<td>8.6</td>
</tr>
</tbody>
</table>

1 The figures for the previous year have been restated
**6.2.3 Fiscal year 2017: Segment reporting [2/2]**

Segment reporting
in € m

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital employed</td>
<td>1,004.6</td>
<td>527.9</td>
<td>6,534.8</td>
<td>5,332.2</td>
<td>3,501.9</td>
<td>3,066.5</td>
<td>2,293.0</td>
<td>2,094.2</td>
<td>2,062.2</td>
<td>3,816.6</td>
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<td>Of which carrying amount of entities accounted for using the equity method</td>
<td>(198.8)</td>
<td>0.0</td>
<td>(386.0)</td>
<td>(282.7)</td>
<td>(670.2)</td>
<td>(207.7)</td>
<td>(133.6)</td>
<td>(56.7)</td>
<td>(0.0)</td>
<td>(1,288.5)</td>
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<td>Capital expenditure on intangible assets and property, plant and equipment</td>
<td>83.3</td>
<td>51.9</td>
<td>784.0</td>
<td>795.6</td>
<td>417.3</td>
<td>208.1</td>
<td>115.7</td>
<td>111.1</td>
<td>18.9</td>
<td>22.7</td>
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Total

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<tr>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>15,396.5</td>
<td>14,837.4</td>
</tr>
</tbody>
</table>

<< Agenda
### Fiscal year 2017: Internal financing capability

<table>
<thead>
<tr>
<th></th>
<th>2017</th>
<th>2016</th>
<th>Change in %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retained cash flow (RCF)</td>
<td>€ m</td>
<td>3,050.3</td>
<td>949.5</td>
</tr>
<tr>
<td>+/- effects from the nuclear fuel tax refund</td>
<td>€ m</td>
<td>-1,520.8</td>
<td>0.0</td>
</tr>
<tr>
<td>Retained cash flow II (RCF II)</td>
<td>(a) € m</td>
<td>1,529.5</td>
<td>949.5</td>
</tr>
<tr>
<td>Net (cash) investment</td>
<td>(b) € m</td>
<td>1,367.1</td>
<td>1,316.9</td>
</tr>
<tr>
<td>Internal financing capability</td>
<td>(a)/(b) %</td>
<td>111.9</td>
<td>72.1</td>
</tr>
</tbody>
</table>

- **RCF:** Cash-relevant earnings after settlement of stakeholder needs (interest payments, taxes, dividends)
- **RCF II:** RCF adjusted for the following effects of the nuclear fuel tax refund
  - Will be used for debt repayment of around €830 m in 2018
  - Will be used for additional investment of €690 m from 2018 to 2020
- **Internal financing capability:**
  - Key performance indicator for the Group’s ability to finance its capital expenditures (net cash investment) internally without the need to raise additional capital
  - Mid-term target: We aim to achieve an internal financing capability of ≥ 100% each year
### 6.3.1 Half year-2018: Financial and strategic performance indicators

#### in € m

<table>
<thead>
<tr>
<th>Category</th>
<th>1/1 – 30/6/2018</th>
<th>1/1 – 30/6/2017</th>
<th>Change in %</th>
</tr>
</thead>
<tbody>
<tr>
<td>External revenue</td>
<td>11,561.8</td>
<td>10,475.8</td>
<td>10.4</td>
</tr>
<tr>
<td>Adjusted EBITDA</td>
<td>1,141.0</td>
<td>1,072.6</td>
<td>6.4</td>
</tr>
<tr>
<td>Share of adjusted EBITDA accounted for by Sales in € million / in %</td>
<td>159.5 / 14.0</td>
<td>180.8 / 16.9</td>
<td>-11.8 / –</td>
</tr>
<tr>
<td>Share of adjusted EBITDA accounted for by Grids in € million / in %</td>
<td>684.9 / 60.0</td>
<td>610.6 / 56.9</td>
<td>12.2 / –</td>
</tr>
<tr>
<td>Share of adjusted EBITDA accounted for by Renewable Energies in € million / in %</td>
<td>164.8 / 14.4</td>
<td>152.4 / 14.2</td>
<td>8.1 / –</td>
</tr>
<tr>
<td>Share of adjusted EBITDA accounted for by Generation and Trading in € million / in %</td>
<td>138.8 / 12.2</td>
<td>102.3 / 9.5</td>
<td>35.7 / –</td>
</tr>
<tr>
<td>Share of adjusted EBITDA accounted for by Other/Consolidation in € million / in %</td>
<td>-7.0 / -0.6</td>
<td>26.5 / 2.5</td>
<td>-126.4 / –</td>
</tr>
<tr>
<td>EBITDA</td>
<td>1,184.7</td>
<td>2,639.6</td>
<td>-55.1</td>
</tr>
<tr>
<td>Adjusted EBIT</td>
<td>569.4</td>
<td>543.0</td>
<td>1.2</td>
</tr>
<tr>
<td>EBIT</td>
<td>586.8</td>
<td>2,082.6</td>
<td>-71.8</td>
</tr>
<tr>
<td>Group net profit</td>
<td>346.2</td>
<td>1,679.3</td>
<td>-79.4</td>
</tr>
<tr>
<td>Earnings per share from Group net profit in €</td>
<td>1.28</td>
<td>6.20</td>
<td>-79.4</td>
</tr>
<tr>
<td>Retained cash flow</td>
<td>333.5</td>
<td>1,884.6</td>
<td>-82.3</td>
</tr>
<tr>
<td>Retained cash flow II</td>
<td>433.5</td>
<td>881.8</td>
<td>-50.8</td>
</tr>
<tr>
<td>Net (cash) investments</td>
<td>556.1</td>
<td>449.5</td>
<td>23.7</td>
</tr>
</tbody>
</table>

1 In relation to profit/loss attributable to the shareholders of EnBW AG.
2 The figures for the previous year have been restated.
### 6.3.2 Half year-2018: Non-financial performance indicators\(^1\)

<table>
<thead>
<tr>
<th></th>
<th>1/1 – 30/6/2018</th>
<th>1/1 – 30/6/2017</th>
<th>Change in %</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Customers goal dimension</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EnBW/Yello Customer Satisfaction Index</td>
<td>130 / 150</td>
<td>139 / 164</td>
<td>-6.5 / -8.5</td>
</tr>
<tr>
<td>SAIDI (electricity) in min/year(^2)</td>
<td>8</td>
<td>9</td>
<td>-11.1</td>
</tr>
<tr>
<td><strong>Employees goal dimension</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LTIF(^3)</td>
<td>2.5</td>
<td>3.1</td>
<td>-19.4</td>
</tr>
<tr>
<td><strong>Employees(^4,5)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number</td>
<td>21,397</td>
<td>21,324</td>
<td>0.3</td>
</tr>
<tr>
<td>Number of full-time equivalents(^6)</td>
<td>19,999</td>
<td>19,862</td>
<td>0.7</td>
</tr>
</tbody>
</table>

---

\(^1\) The values for the key performance indicators Reputation Index, Employee Commitment Index (ECI), "Installed output of renewable energies (RE) in GW and the share of the generation capacity accounted for by RE" and CO\(_2\) intensity are solely determined collected at the end of the year.

\(^2\) The figures for the previous year have been restated.

\(^3\) Variations in the group of consolidated companies; only those companies controlled by the Group are included.

\(^4\) Number of employees excluding apprentices/trainees and inactive employees.

\(^5\) The number of employees for the ITOs (ONTRAS Gastransport GmbH, terranets bw GmbH and TransnetBW GmbH) is only updated at the end of the year; for intervals of less than a year, the number of employees from 31/12/2017 is carried forward.

\(^6\) Converted into full-time equivalents.
### 6.4.1 Financial and non-financial KPIs and targets: Finance and strategy goal dimensions

#### Finance goal dimension

<table>
<thead>
<tr>
<th>Goal</th>
<th>KPI</th>
<th>2017</th>
<th>Target 2020</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Securing profitability</td>
<td>Adjusted EBITDA in € bn</td>
<td></td>
<td>2.3–2.5</td>
<td>The operating result is to return to the average level achieved before the Energiewende. The total regulated business (Grids and Renewable Energies segments) together contributes around 70 % to this result.</td>
</tr>
<tr>
<td>High level of financial discipline</td>
<td>Internal financing capability in %</td>
<td>111.9</td>
<td>&gt;100</td>
<td>The amount of net financial liabilities is controlled by limiting net investment to the level of retained cash flow II. The Group can thus finance its own restructuring internally.</td>
</tr>
<tr>
<td>Increasing Group value</td>
<td>ROCE in %</td>
<td>7.3</td>
<td>8.5 - 11</td>
<td>Return on capital employed (ROCE) is higher than the cost of capital. EnBW is creating value for its stakeholders.</td>
</tr>
</tbody>
</table>

#### Strategy goal dimension

1 Other / Consolidation accounts for €0.1 billion / +3 % of the overall adjusted EBITDA.

<table>
<thead>
<tr>
<th>Goal from “Customer proximity” / Sales</th>
<th>Share of overall adjusted EBITDA in € billion / in %</th>
<th>2017</th>
<th>2020</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Share of result from Grids</td>
<td>Share of overall adjusted EBITDA in € billion / in %</td>
<td>.0 / 49.5</td>
<td>1.0 / 40.0</td>
<td>The operating result for the Grids segment increases by 25% from € 0.8 billion (reference year: 2012) to € 1.0 billion in 2020 and represents around 40% of the Group operating result. The share accounted for by stable regulated business is expanding.</td>
</tr>
<tr>
<td>Share of result from Renewable Energies</td>
<td>Share of overall adjusted EBITDA in € billion / in %</td>
<td>.3 / 15.7</td>
<td>0.7 / 30.0</td>
<td>The operating result for the Renewable Energies segment increases by 250 % from € 0.2 billion (reference year: 2012) to € 0.7 billion in 2020 and represents around 30 % of the Group operating result. EnBW is becoming more sustainable.</td>
</tr>
<tr>
<td>Share of result from Generation and Trading</td>
<td>Share of overall adjusted EBITDA in € billion / in %</td>
<td>.4 / 17.8</td>
<td>0.3 / 15.0</td>
<td>The operating result for the Generation and Trading segment falls by 80 % from € 1.2 billion (reference year: 2012) to € 0.3 billion in 2020 due to changed framework conditions and only represents around 15 % of the Group operating result.</td>
</tr>
</tbody>
</table>

1 Other / Consolidation accounts for €0.1 billion / +3 % of the overall adjusted EBITDA.
### Financial and non-financial KPIs and targets: Other goal dimensions

#### Customers & society goal dimension

<table>
<thead>
<tr>
<th>Goal</th>
<th>KPI</th>
<th>2017</th>
<th>Target 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reputation</td>
<td>Reputation Index</td>
<td>52.1</td>
<td>55.4</td>
</tr>
<tr>
<td>Customer proximity</td>
<td>EnBW / Yello Customer Satisfaction Index</td>
<td>143 / 161</td>
<td>&gt; 136 / &gt; 159</td>
</tr>
<tr>
<td>Supply reliability</td>
<td>SAIDI (electricity) in min / year</td>
<td>19</td>
<td>&lt; 25</td>
</tr>
</tbody>
</table>

In parallel with the restructuring of the business model, EnBW aims to continuously improve its reputation.

EnBW and Yello customers are satisfied customers with a high level of customer loyalty. EnBW and Yello are organisations strongly oriented towards customers and meet the needs and wishes of their customers through tailored solutions and products.

Maintaining supply quality for its customers is of central importance to EnBW in the further development of its grids. The high degree of supply reliability in the grid area operated by EnBW is based on comprehensive investment in grids and plants and our abundant system expertise.

#### Employees goal dimension

<table>
<thead>
<tr>
<th>Goal</th>
<th>KPI</th>
<th>2017</th>
<th>Target 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employee commitment</td>
<td>Employee Commitment Index (ECI)¹</td>
<td>60</td>
<td>65</td>
</tr>
<tr>
<td>Occupational safety</td>
<td>LTIF¹</td>
<td>3.0</td>
<td>&lt;previous year</td>
</tr>
</tbody>
</table>

The commitment of our employees to EnBW is very strong and there is faith in the future viability of the company.

The number of accidents at work and the resulting days of absence remains stable or is falling.

#### Environment goal dimension

<table>
<thead>
<tr>
<th>Goal</th>
<th>KPI</th>
<th>2017</th>
<th>Target 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expand renewable energies (RE)</td>
<td>Installed capacity of RE in GW and the share of t. generation capacity accounted for by RE in %</td>
<td>3.4 / 25.9</td>
<td>5.0 / &gt; 40</td>
</tr>
<tr>
<td>Climate protection</td>
<td>CO₂ intensity in g/kWh</td>
<td>556</td>
<td>-15 % to -20 %</td>
</tr>
</tbody>
</table>

The share of the generation capacity accounted for by renewable energies has doubled compared with 2012. Onshore and offshore wind power and hydropower are at the forefront of this development.

EnBW actively contributes to climate protection by successively reducing the CO₂ intensity of its own generation of electricity (excluding nuclear power) by 15 to 20% by 2020 compared to 606 g / kWh in the reference year 2015.

¹ Variations in the group of consolidated companies
1. EnBW at a glance................................................................. page 3
   › Key financials
   › Key non-financials

2. Environment................................................................. page 6
   › Political environment
   › Regulatory environment
   › Markets

3. Strategy ........................................................................ page 38
   › EnBW 2020 Strategy
   › EnBW 2025 Strategy
   › Further strategic aspects:
     Broadband, Contracting, Research and Development,
     Innovation, Digitalisation, Corporate Sustainability,
     Decarbonisation, Corporate Governance,
     Compliance, Data Protection

4. Segments ................................................................. page 76
   › Sales
   › Grids
   › Renewable Energies
   › Generation and Trading

5. EnBW’s Main Shareholdings................................. page 114
   › EnergieDienst Holding AG
   › Pražská energetika, a. s.
   › Stadtwerke Düsseldorf Group
   › VNG AG

6. Key Financials and Non-financials................ page 131
   › Five-year summary
   › Fiscal year 2017
   › Half year 2018
   › Finance strategic and other goal dimensions

7. Capital Markets .................................................. page 143
   › Asset Liability Management Model
   › Bonds
   › Maturity profile
   › Credit Ratings
   › Shareholder structure
   › Share
   › Key financial indicators

8. Service ................................................................. page 155
   › Financial calendar
   › Important links
   › Contact details
7.1 Service-focused Investor Relations

Ingo Peter Voigt
Head of Finance, M&A and Investor Relations

- EnBW views investor relations as a service provided for one of its most important stakeholders.
- Investor Relations strives to meet the information requirements of investors, analysts, rating agencies and banks in a timely manner. Active communication and ongoing dialogue with the target groups enable us to underscore EnBW’s potential for generating value added.
- As only a small proportion of our shares are in free float, our investor relations activities concentrate on fixed-income investors and credit analysts on the buy and sell side to ensure access to the capital markets at all times.
- EnBW is aware of the importance of investor relations. The interest of our investors is always of relevance when taking strategic decisions.
7.2 Financial objectives and financing strategy

EnBW’s financial objectives

- Optimising the cost of capital
- Ensuring sufficient liquidity for operations at all times
- Limiting interest rate risk for the Group
- Maintaining a strong credit standing

EnBW’s financing strategy

- Multi-pillar strategy offering maximum flexibility in financing
- Diversified market approach
- Widely spread maturity profile; preference for long-term financing for the purpose of risk mitigation
- Hybrid capital to support senior debt holders
- Investments limited to RCF and thus managing net financial debt
- Sophisticated Asset Liability Management to cover future pension and nuclear provisions and limit burden on OCF
7.3 Asset Liability Management Model: EnBW nuclear and pension provisions still covered

EnBW’s CF-based model\(^1\)

\(^1\) As of 31 December 2017

2 Adjusted for inflation
7.4 EnBW has a flexible access to various financing sources\(^1\)

### Financing sources

<table>
<thead>
<tr>
<th>Source</th>
<th>€ bn</th>
</tr>
</thead>
<tbody>
<tr>
<td>Debt Issuance Programme</td>
<td>7.0</td>
</tr>
<tr>
<td>Hybrid Bonds(^2)</td>
<td>2.0</td>
</tr>
<tr>
<td>Commercial Paper Programme</td>
<td>2.0</td>
</tr>
<tr>
<td>Syndicated Credit Line</td>
<td>1.5</td>
</tr>
<tr>
<td>Bilateral Free Credit Lines(^2)</td>
<td>1.4</td>
</tr>
</tbody>
</table>

\(^1\) As of 30 June 2018

\(^2\) Rounded figures
## 7.5.1 Fixed income: EnBW’s senior bonds

**Issuer: EnBW Finance B.V.**

<table>
<thead>
<tr>
<th>CCY</th>
<th>Denomination</th>
<th>Volume (mn)</th>
<th>Term (years)</th>
<th>Issue date</th>
<th>Maturity</th>
<th>Coupon (%)</th>
<th>Interest date</th>
<th>Security No. (WKN)</th>
<th>ISIN No.</th>
<th>Stock Ex.</th>
</tr>
</thead>
<tbody>
<tr>
<td>€</td>
<td>50,000</td>
<td>750</td>
<td>10</td>
<td>20/11/2008</td>
<td>20/11/2018</td>
<td>6.875</td>
<td>20 Nov</td>
<td>A0T3US</td>
<td>XS0399861086</td>
<td>L</td>
</tr>
<tr>
<td>CHF</td>
<td>5,000</td>
<td>100</td>
<td>10</td>
<td>12/7/2013</td>
<td>12/7/2023</td>
<td>2.25</td>
<td>12 July</td>
<td>A1HMSN</td>
<td>CH0217677654</td>
<td>S</td>
</tr>
<tr>
<td>€</td>
<td>1,000</td>
<td>500</td>
<td>20</td>
<td>9/12/2004</td>
<td>16/1/2025</td>
<td>4.875</td>
<td>16 Jan</td>
<td>A0DG9U</td>
<td>XS0207320242</td>
<td>L</td>
</tr>
<tr>
<td>€</td>
<td>1,000</td>
<td>500</td>
<td>12</td>
<td>4/6/2014</td>
<td>4/6/2026</td>
<td>2.500</td>
<td>4 June</td>
<td>A1ZJ9E</td>
<td>XS1074208270</td>
<td>L</td>
</tr>
<tr>
<td>€</td>
<td>100,000</td>
<td>100</td>
<td>20</td>
<td>13/6/2014</td>
<td>13/6/2034</td>
<td>2.875</td>
<td>13 June</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>YEN</td>
<td>100,000,000</td>
<td>20,000</td>
<td>30</td>
<td>16/12/2008</td>
<td>16/12/2038</td>
<td>3.880</td>
<td>16 June &amp; 16 Dec</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>€</td>
<td>1,000</td>
<td>600</td>
<td>30</td>
<td>7/7/2009</td>
<td>7/7/2039</td>
<td>6.125</td>
<td>7 July</td>
<td>A1AJTV</td>
<td>XS0438844093</td>
<td>L</td>
</tr>
<tr>
<td>€</td>
<td>100,000</td>
<td>100</td>
<td>25</td>
<td>1/8/2014</td>
<td>1/8/2039</td>
<td>3.080</td>
<td>16 June</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>€</td>
<td>100,000</td>
<td>50</td>
<td>30</td>
<td>1/8/2014</td>
<td>1/8/2044</td>
<td>2.900</td>
<td>1 Aug</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

as of 30 June 2018

L = Luxembourg, S = Switzerland
### Issuer: EnBW Energie Baden-Württemberg AG

<table>
<thead>
<tr>
<th>CCY</th>
<th>Denomination</th>
<th>Volume (mn)</th>
<th>Term (years)</th>
<th>Issue date</th>
<th>Maturity</th>
<th>Coupon (%)</th>
<th>Interest date</th>
<th>Security No. (WKN)</th>
<th>ISIN No.</th>
<th>Stock Ex.</th>
</tr>
</thead>
<tbody>
<tr>
<td>€</td>
<td>1,000</td>
<td>1,000(^1)</td>
<td>62</td>
<td>18/3/2014</td>
<td>2/4/2076</td>
<td>3.625</td>
<td>2 April</td>
<td>A11P78</td>
<td>XS1044811591</td>
<td>F, L</td>
</tr>
<tr>
<td>USD(^3)</td>
<td>2,000</td>
<td>300(^1)</td>
<td>60.5</td>
<td>5/10/2016</td>
<td>5/4/2077</td>
<td>5.125</td>
<td>5 April</td>
<td>A2BN7K</td>
<td>XS1498442521</td>
<td>L</td>
</tr>
<tr>
<td>EUR</td>
<td>1,000</td>
<td>725(^1)</td>
<td>60.5</td>
<td>5/10/2016</td>
<td>5/4/2077</td>
<td>3.375</td>
<td>5 April</td>
<td>A2BPFD</td>
<td>XS1405770907</td>
<td>L</td>
</tr>
</tbody>
</table>

as of 30 June 2018

L = Luxembourg, F = Frankfurt

\(^1\) Hybrid bond coupon initially

\(^2\) Increase of hybrid bond ISIN No. XS0674277933

\(^3\) Regulation S: These Notes are not offered or sold within the United States or to, or for the account or benefit of, U.S. persons
7.5.3 Fixed Income: Maturities of EnBW’s bonds

in € m

- **2018**: 836
- **2021**: 1,000
- **2022**: 993
- **2023**: 86
- **2025**: 500
- **2026**: 500
- **2027**: 700
- **2028**: 1,000
- **2029**: 993

- **First call dates of hybrid bonds**
- **Senior bonds**
- **Hybrid bonds**

---

1. Includes CHF 100 million, converted as of the reporting date of 30/06/2018
2. First call date: hybrid maturing in 2076
3. First call date: hybrid maturing in 2077
4. Includes USD 300 million (swap in EUR), coupon for Swap 5.125%
5. Includes USD 300 million, converted as of 05/10/2016
6. JPY 20 billion (swap in EUR), coupon for Swap 3.880%
## 7.5.4 Fixed income: Credit Ratings

**Rating:** a sound financial policy has allowed EnBW to maintain A category ratings against the negative sector trend

<table>
<thead>
<tr>
<th>Rating</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moody's Investors Service</td>
<td>A3/ stable</td>
</tr>
<tr>
<td>Standard &amp; Poor's Ratings Services</td>
<td>A-/ stable</td>
</tr>
<tr>
<td>Fitch Ratings</td>
<td>A-/ stable</td>
</tr>
</tbody>
</table>

- **Leadership position as a vertically integrated utility within Baden-Wuerttemberg**
- **Around 50% of EBITDA from low risk regulated distribution and transmission activities and growing share of renewables under contracts, as EnBW continues to invest in line with its 2020 strategy**
- **Difficult operating environment in Germany for conventional generation and increasingly challenging environment in retail markets**
- **Certain execution risks relating to a large investment programme**
- **Balanced financial policies and track record in implementing measures to shore up its financial profile**
- **Strong shareholder support**

- **Solid regional competitive position and increasing foothold in national gas distribution**
- **Considerable progress made in business repositioning strategy**
- **Increased share of operating income from low-risk regulated activities and long-term contracted renewables**
- **Still significant exposure to volatile and commodity-driven wholesale power prices**
- **Well managed funding of nuclear waste-related liabilities, without major disruptions to its strategy or changes to the capital structure**
- **Prudent financial policy underpinned by utilisation of nuclear tax refund for capex and deleveraging**

- **Continued evolution towards a more regulated and contracted business profile**
- **High earnings visibility in grids and renewables partly offset by residual nuclear decommissioning risk; payment of EUR4.8 billion for transferring responsibility for nuclear waste storage has substantially reduced these risk**
- **Average forecast credit metrics are generally stronger than peers, with some exceptions with respect to funds from operations (FFO) fixed charge cover**
- **If the share of regulated EBITDA exceeds 50% on a sustained basis, Fitch may apply a one-notch uplift to the senior unsecured rating**
7.6.1 Equity capital market: Shareholder structure

**Shareholder structure**

<table>
<thead>
<tr>
<th>Shareholder Structure</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>OEW Energie-Beteiligungs GmbH</td>
<td>46.75%</td>
</tr>
<tr>
<td>NECKARPRI-Beteiligungsgesellschaft mbH</td>
<td>46.75%</td>
</tr>
<tr>
<td>Badische Energieaktionaers-Vereinigung</td>
<td>2.45%</td>
</tr>
<tr>
<td>Gemeindeelektrizitaetsverband Schwarzwald-Donau</td>
<td>0.97%</td>
</tr>
<tr>
<td>Neckar-Elektrizitaetsverband</td>
<td>0.63%</td>
</tr>
<tr>
<td>EnBW Energie Baden-Wuerttemberg AG</td>
<td>2.08%</td>
</tr>
<tr>
<td>Other shareholders</td>
<td>0.39%</td>
</tr>
</tbody>
</table>

**Stock exchange information**

<table>
<thead>
<tr>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISIN/security ident. no.</td>
<td>DE0005220008/ 522000</td>
</tr>
<tr>
<td>Stock exchange abbreviation</td>
<td>Bloomberg EBK GY/reutersEBK/EBKG.DE</td>
</tr>
<tr>
<td>Transparency level</td>
<td>General Standard</td>
</tr>
<tr>
<td>Indices</td>
<td>General All Share, DAXsector All Utilities, CDAX</td>
</tr>
<tr>
<td>Number of shares</td>
<td>276,604,704</td>
</tr>
<tr>
<td>Class of share</td>
<td>Ordinary no-par value bearer shares</td>
</tr>
<tr>
<td>Stock markets</td>
<td>Regulated market: Frankfurt and Stuttgart, over-the-counter trading: Berlin and Munich</td>
</tr>
</tbody>
</table>

1 May not add up to 100% possible due to rounding
2 100% subsidiary of NECKARPRI GmbH, which is a 100% subsidiary of the federal state of Baden-Württemberg
### 7.6.2 Equity capital market: EnBW share in figures

#### Key Figures:

<table>
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<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Annual high</strong></td>
<td>€29.63</td>
<td>€24.25</td>
<td>€27.00</td>
<td>€28.39</td>
<td>€30.89</td>
</tr>
<tr>
<td><strong>Annual low</strong></td>
<td>€20.00</td>
<td>€18.29</td>
<td>€20.21</td>
<td>€24.50</td>
<td>€25.00</td>
</tr>
<tr>
<td><strong>Closing price</strong></td>
<td>€28.78</td>
<td>€19.69</td>
<td>€20.62</td>
<td>€25.60</td>
<td>€26.85</td>
</tr>
<tr>
<td><strong>Number of shares</strong></td>
<td>m270.855</td>
<td>m270.855</td>
<td>m270.855</td>
<td>m270.855</td>
<td>m270.855</td>
</tr>
<tr>
<td><strong>Market capitalisation</strong></td>
<td>€7.8 bn</td>
<td>€5.3 bn</td>
<td>€5.6 bn</td>
<td>€6.9 bn</td>
<td>€7.3 bn</td>
</tr>
<tr>
<td><strong>Stock exchange trade</strong></td>
<td># of shares</td>
<td>157.021</td>
<td>80.173</td>
<td>125.440</td>
<td>157.809</td>
</tr>
<tr>
<td><strong>Stock exchange trade (daily average)</strong></td>
<td># of shares</td>
<td>604</td>
<td>391</td>
<td>568</td>
<td>711</td>
</tr>
<tr>
<td><strong>Distribution</strong></td>
<td>€m135.4</td>
<td>0.00</td>
<td>149.0</td>
<td>186.9</td>
<td>186.9</td>
</tr>
<tr>
<td><strong>Dividend per share</strong></td>
<td>€0.50</td>
<td>0.00</td>
<td>0.55</td>
<td>0.69</td>
<td>0.69</td>
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</tbody>
</table>

1. Share value based on closing price trading the EnBW share in XETRA.
3. Distribution in terms of shares entitled as of year-end.
### Key financial indicators

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<tr>
<th>Securing Profitability</th>
<th>Portfolio Transformation</th>
</tr>
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<tr>
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<td>Grids and Renewables with ~70%</td>
</tr>
<tr>
<td></td>
<td>Adj. EBITDA contribution by 2020</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Internal Financing Capability</th>
<th>Adj. EBITDA Target 2020 €2.3-2.5 bn</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retained Cash Flow minus</td>
<td>Adj. EBITDA Target 2025 €3.0-3.3 bn</td>
</tr>
<tr>
<td>Net Investments &gt;0</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>High Level of Financial Discipline</th>
<th>Coverage of pension and nuclear provisions</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Asset Liability Management Model</td>
</tr>
<tr>
<td></td>
<td>Cap on Operating Cash Flow of € 300 m p.a.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Increasing Group Value</th>
<th>ROCE &gt; WACC</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>8.5-11.0</td>
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<table>
<thead>
<tr>
<th>Access to Capital Markets</th>
<th>Sustainable Dividend Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solid Investment Grade Ratings</td>
<td>Payout Ratio of 40%-60% (medium-term target)</td>
</tr>
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   › Key non-financials

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   › Regulatory environment
   › Markets

3. Strategy ................................................................................ page 38 »»
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   › EnBW 2025 Strategy
   › Further strategic aspects:
     Broadband, Contracting, Research and Development,
     Innovation, Digitalisation, Corporate Sustainability,
     Decarbonisation, Corporate Governance,
     Compliance, Data Protection

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   › Grids
   › Renewable Energies
   › Generation and Trading

5. EnBW’s Main Shareholdings.............................................. page 114 »»
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   › Pražská energetika, a. s.
   › Stadtwerke Düsseldorf Group
   › VNG AG

6. Key Financials and Non-financials................................. page 131 »»
   › Five-year summary
   › Fiscal year 2017
   › Half year 2018
   › Finance strategic and other goal dimensions

7. Capital Markets ............................................................... page 143 »»
   › Asset Liability Management Model
   › Bonds
   › Maturity profile
   › Credit Ratings
   › Shareholder structure
   › Share
   › Key financial indicators

8. Service ................................................................................ page 155 »»
   › Financial calendar
   › Important links
   › Contact details
## 8.1 Financial calendar

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 November 2018</td>
<td>Quarterly Statement January to September 2018</td>
</tr>
<tr>
<td></td>
<td>(Conference time: 01:00 pm CET)</td>
</tr>
<tr>
<td>28 March 2019</td>
<td>Integrated Annual Report January to December 2018</td>
</tr>
<tr>
<td>8 May 2019</td>
<td>Annual General Meeting</td>
</tr>
<tr>
<td>10 May 2019</td>
<td>Quarterly Statement January to March 2019</td>
</tr>
<tr>
<td>8 November 2019</td>
<td>Quarterly Statement January to September 2019</td>
</tr>
</tbody>
</table>
8.2 Contact details

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### Important links

<table>
<thead>
<tr>
<th>EnBW group online</th>
<th><a href="http://www.enbw.com">www.enbw.com</a></th>
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<tbody>
<tr>
<td>EnBW Investor Relations</td>
<td><a href="http://www.enbw.com/investors">www.enbw.com/investors</a></td>
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<tr>
<td>EnBW Overview Supervisory Board</td>
<td><a href="https://www.enbw.com/company/the-group/about-us/supervisory-board/">https://www.enbw.com/company/the-group/about-us/supervisory-board/</a></td>
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<tr>
<td>EnBW Strategy</td>
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<td>Maturities of our bonds</td>
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</table>
8.4 Important note

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